# Knowledge about TB among Adult Populations Living in Urban Slums of Hyderabad City

## A Baseline Study Report: 2016-17

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Knowledge about TB among Adult Populations Living in Urban Slums of Hyderabad City
A Baseline Study Report: 2016-17


**Publisher**

KHPT
IT/BT Park, 5th Floor
#1-4, Rajajinagar Industrial Area
Behind KSSIDC Administrative Office
Rajajinagar, Bengaluru - 560 044



**Study Team**

Dr Aditi Krishnamurthy
Gururaj Patil
Joel Jose
Dr Karthikeyan Kumarasamy
Mallika Tharakan
Mohan HL
Dr Oommen George
Dr Prakash Kudur

Dr Rajaram S
Rajiv Kunji Raman
Ramesh Dasari
Ramesh Mangalaparthi
Dr Ravi Prakash
Dr Reynold Washington
Dr Shajy Isac
Vikas Panibatla

**Editing**

Vrinda Manocha
Mallika Tharakan

**Design & Layout**

Anilkumar Rampur

**Photography**

Vrinda Manocha





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# Knowledge about TB among Adult Populations Living in Urban Slums of Hyderabad City

## A Baseline Study Report: 2016-17

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# ACRONYMS

| | |
|---|---|
| **AWW** | Anganwadi Worker |
| **BL** | Base-line |
| **CS** | Chest Symptomatic (person with symptoms of pulmonary TB) |
| **DMC** | Designated Microscopy Centre |
| **DOTS** | Directly Observed Treatment, Short Course |
| **FLW** | Front-line Workers / Field Level Workers |
| **GH** | Government Hospital |
| **GoI** | Government of India |
| **HIV** | Human Immunodeficiency Virus |
| **IEC** | Information Education and Communication |
| **IPC** | Inter-personal Communication |
| **ICT** | Information Communication Technology |
| **KHPT** | Karnataka Health Promotion Trust |
| **MH** | Municipal Hospital |
| **MDR** | Multi-drug Resistant (TB) |
| **NGO** | Non-government Organization |
| **ORW** | Outreach Workers |
| **PHC** | Primary Health Centre |
| **PPS** | Probability Proportion to Size |
| **PSU** | Primary Sampling Unit |
| **RNTCP** | Revised National Tuberculosis Control Program |
| **SSM** | Sputum Smear Microscopy |
| **TB** | Tuberculosis |
| **TB-H** | TB Hospital |
| **TBAI** | TB Alert India |
| **THALI** | Tuberculosis Health Action Learning Initiative |
| **TU** | Tuberculosis Unit |
| **UFWC** | Urban Family Welfare Centre |
| **UHC** | Urban Health Centre |
| **UHP** | Urban Health Post |
| **USAID** | United States Agency for International Development |

# FOREWORD

The Government of India has set ambitious targets to eliminate TB by 2025 in the country. Health seeking behaviour of the individuals having symptoms suggestive of TB is the first step in identifying the persons with TB. An individual's knowledge, attitudes, and perceptions about TB influence his/her behaviour. These factors influence health seeking, their understanding of the diagnosis, and treatment, and their readiness to start and adhere to treatment. Thus, it is important to understand the levels of knowledge and health seeking behaviour for TB among the general population as well as persons had/having symptoms suggestive of TB, especially among the urban poor. Karnataka Health Promotion Trust (KHPT), Bengaluru, conducted a program evaluation in the selected slum areas of Hyderabad in partnership with TB Alert India. This was carried out to understand the current level of knowledge and health seeking behaviour for TB among adult population. The evaluation is in the context of a USAID funded Tuberculosis Health Action Learning Initiative (THALI).

The assessment was conducted in Bengaluru and Hyderabad cities. A sample of population from 60 slum areas and 480 households was drawn up to determine whether adults in the households of urban poor know about TB. In addition, adult persons who reported having persistent cough during the past 6 months from the same geography, were interviewed for their knowledge and health seeking behaviour in relation to symptoms suggestive of TB.

This report is prepared by the Karnataka Health Promotion Trust (KHPT) in partnership with TB Alert India, Hyderabad. The information will help programme managers to plan focused communication activities and specific messages for people who are most vulnerable to TB. This will aid in TB prevention and control activities among the urban poor in Hyderabad, Bengaluru and across other cities in India.

**Dr. Ch. Surya Prakash,**
Joint Director(TB) &
State TB Officer
Telangana State

# ACKNOWLEDGEMENTS

The baseline study on "Knowledge and Health Seeking Behavior for TB among Adults Living in Urban Slums of Hyderabad" was successfully completed due to the efforts and involvement of numerous organizations and individuals at different stages of the survey. To the extent possible, we would like to thank everyone who was involved in the survey and made it a success.

First of all, we are grateful to USAID, New Delhi, India for funding this study as a part of the larger project, namely, the Tuberculosis Health Action Learning Initiative (THALI), which aims to establish a holistic approach to TB control efforts in selected Indian cities through implementation of TB prevention activities and patient-centric models of care and support models. We gratefully acknowledge the continuous guidance and support from the various staff of KHPT in Bengaluru for this study, and with preparation of the report. Our heartfelt thanks goes out to the Insitutional Ethics Committee of St. John's Medical College and Hospital, Bengaluru, for approving the study. We are thankful to Joint Director (TB) and State TB Officer, Telangana State, District TB Officers of Hyderabad City and other State and District RNTCP staff for extending their support. Special thanks to the local officials in all the sample areas for facilitating data collection.

We also thank the program outreach workers for their hard work in conducting the mapping of slum areas. We appreciate and acknowledge the commitment and hard work put in by the study coordinator, field supervisors and field interviewers in collecting the data.

Finally, we acknowledge all the respondents of the study, the eligible women and men of Hyderabad, who gave their time and responded to the lengthy questionnaires with tremendous patients and without any expectation from the study team.

# 01

# INTRODUCTION

# Background

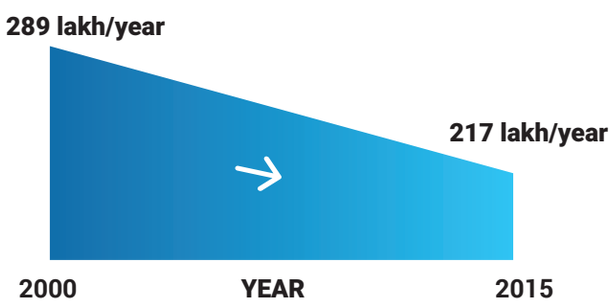

India accounts for one-fourth of the global tuberculosis (TB) burden. In 2015, an estimated 28 lakh cases occurred and 4.8 lakh people died due to TB.

India has the highest burden of both TB and multi-drug resistant TB (MDR TB) based on estimates reported in the Global TB Report 2016. An estimated 1.3 lakh incident emerge annually in India, which includes 79,000 MDR TB patients estimated among notified pulmonary cases. India bears the second highest number of estimated HIV associated TB in the world. An estimated 1.1 lakh HIV-associated TB occurred in 2015 and about 37,000 such patients died.

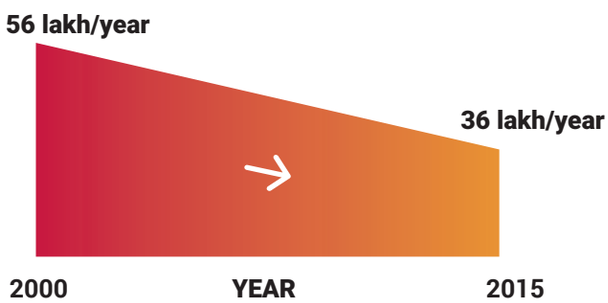
The estimates of TB in India have been revised upwards based on new evidence. This apparent increase in the disease burden reflects the incorporation of more accurate data. With backward calculations, both TB incidence and mortality rates show a declining trend from the year 2000 to 2015.

The incidence of TB has reduced from 289 per lakh per year in 2000 to 217 per lakh per year in 2015 and the mortality due to TB has reduced from 56 per lakh per year in 2000 to 36 per lakh per year in 2015.[1]

## INCIDENCE OF TB




## MORTALITY DUE TO TB




[1] TB-India 2017 (RNTCP-Annual Status Report)

# Project brief - THALI

The United States Agency for International Development (USAID) awarded multiple TB Health Action Learning Initiative (THALI) awards in January 2016, with the goal of gaining improvement in national TB notification and treatment success rates across India over four years.

Under one such award, THALI, implemented by Karnataka Health Promotion Trust KHPT, in partnership with TB Alert India (TBAI), improves health seeking by the urban poor, TB diagnosis, notification and treatment outcomes. THALI works in collaboration with the RNTCP and focuses on developing successful models of patient-centred care and support that aim to help vulnerable populations gain access to quality TB services from health providers of the patient's choice. KHPT focuses on the objective of improved urban TB control in two cities-Bengaluru (Karnataka) and Hyderabad (Telangana). Since June 2018, THALI has expanded to more geographies, and now operates in 15 districts in Karnataka, six districts in Telangana and three in Andhra Pradesh. KHPT implements THALI in Karnataka, while TBAI implements the project in Telangana and Andhra Pradesh.

# Key principles for TB prevention and care

1. **Appropriate health-seeking behaviour of people with symptoms**
2. **Evidence-based diagnosis**
3. **Standard, evidence-based treatment**
4. **TB notification**
5. **Treatment follow-through**

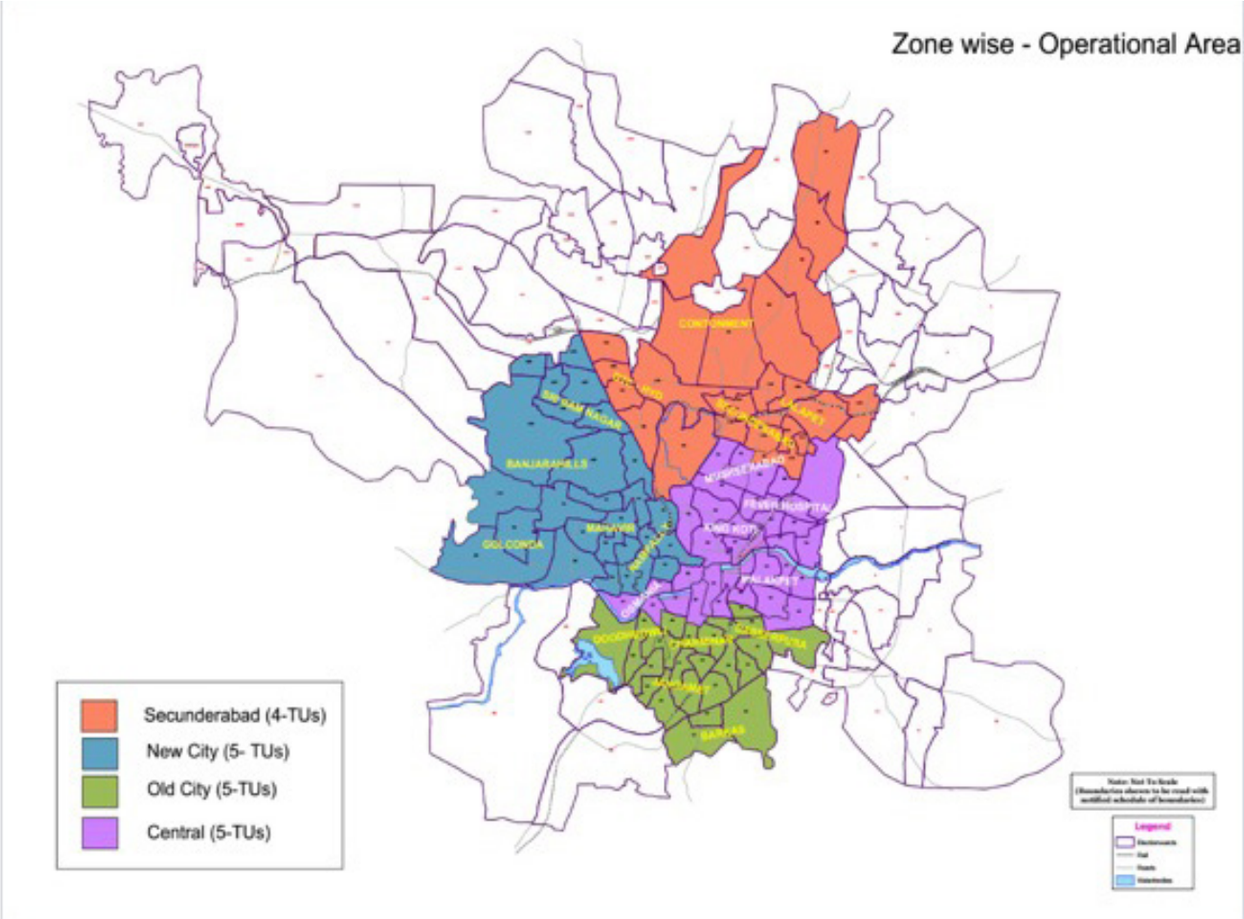
# Priority population

The urban poor are largely concentrated in overcrowded urban communities or slums, About 30 lakh people live in the slums of Bengaluru (2 RNTCP districts) and Hyderabad (1 RNTCP district) where THALI currently operates.

Within the urban slum communities, THALI lays particular emphasis on reaching and supporting the more vulnerable among the urban poor. They include:

- Women, children and the elderly, who tend to be additionally marginalized, neglected and prone to inequitable access to health care in a social environment that prioritizes health care for people considered to be economically productive.
- Persons with co-morbidities, especially HIV-AIDS, diabetes and undernutrition, conditions which enhance the onset of TB disease, and complicate, compromise and/or delay treatment outcomes.
- Persons prone to developing TB who either working in overcrowded workplaces and are exposed to dust, smoke and fumes, and those in occupations which compromise lung function, such as mining, construction and textile industries.
- Migrant workers, who lack family and social support systems, and who are at risk of treatment interruptions.

# Geographical area




| Zone | TUs |
|---|---|
| Secunderabad | Cantonment |
| | Lalapet |
| | Secunderabad |
| | DTC Hyderabad |
| Old City | Dabeerpura |
| | Barkas |
| | Jangammet |
| | Charminar |
| | Doodh Bowli |

| Zone | TUs |
|---|---|
| Central | Musheerabad |
| | Fever Hospital |
| | King Koti |
| | Malakpet |
| | Osmania |
| New City | Mahaveer |
| | Nampally |
| | Golconda |
| | Banjara Hills |
| | Sriram Nagar |

For operational effectiveness of the THALI project, the geographical area of Hyderabad is divided into four zones, each of which is comprised of slums of different Tuberculosis Units (TUs), as detailed above.

# 02

# BASELINE STUDY

## Study design

The Baseline Study among adults in the was envisaged to understand the knowledge aspects of TB among adult persons. The data derived from the study provide statistical evidence on key indicators, which will serve as benchmarks for periodical assessment and for developing community-level strategies.

A two-stage sampling technique was adopted to collect the baseline data. The urban slums in the project area (as per slum mapping data) were chronologically listed with the number of households and their population size. The Probability Proportion to Size (PPS) method was used to arrive at the number of sampled urban slums. The urban slums selected for data collection formed the primary sampling unit (PSU). The urban slums with 300 or more households were segmented equivalent to 100-125 households in each segment, according to natural boundaries. Two segments were selected using PPS sampling from such large slum areas.

A house listing operation was carried out in order to select households for the knowledge survey. In the segmented slum areas, the house listing was carried out only in the selected segments. From the selected households, an adult member was interviewed for the knowledge survey, with his or her consent

## Sample

The sample frame for Hyderabad city consisted of 942 slums. A total of 60 slums were selected for the knowledge survey using the PPS method. Based on the statistical relevance, the total sample size for the knowledge survey was fixed at 480 adult persons. In each PSU, it was proposed that eight households be selected from the house listing using a systematic random sampling technique, and one adult be interviewed for the knowledge survey.

The following matrix shows the sample drawn and coverage of respondents:

**Table 1: Sample coverage, knowledge survey**

| Result of interview | Percent | Number of cases |
|---|---|---|
| Completed | 91.0 | 437 |
| Not at home | 1.5 | 7 |
| Refused | 5.6 | 27 |
| Partially Completed | 1.3 | 6 |
| Other | 0.6 | 3 |
| Total | 100.0 | 480 |

## Survey tools

The tool broadly focuses on the following features in order to analyse responses from the interviewed adult persons.

1. **Household characterstics**
2. **Socio-economic and demographic profile**
3. **Health-related information**
4. **Knowledge aspects of TB**

## Pre-testing of tools and staff orientation

Pre-testing and in-house detailing on tools were done during the orientation of the staff, to assess and ensure that the questions given in the tools would fetch the required information, and that probing would help in the extraction of correct information from the sampled households. The staff orientation was of six days, inclusive of field practice. During these six days of training, trainers focused on procedural aspects and the correct method of filling the tools. The survey staff were given instructions to obtain written consent and to maintain confidentiality. The final tools were derived subsequent to pre-testing and orientation.

Additionally, the survey staff were oriented on the listing and sampling of households for the purpose of interviewing adult respondents. There was an emphasis on screening households at each PSU based on the study requirement i.e., identifying households with adult persons to assess the knowledge aspects of TB.

The training was organized from 29 November, 2016, to 4 December, 2016, and 30 persons attended the training.

## Data collection and analysis

The data collection task started on 8 December, 2016, and continued until 11 April, 2017. A team comprised of a research coordinator, two field supervisors, and 13 field interviewers, carried out the data collection, conducted the necessary re-checks, and submitted the filled-in forms.

The in-house research team facilitated data entry and editing, and analysed the data, fetching information as per the pre-sketched tables.

*Ethical approval for the study was obtained from the Institutional Ethics Committee, St. John's Medical College and Hospital, Bengaluru.*

# 03

# PROFILE OF HOUSEHOLDS AND RESPONDENTS

# Demographic, social and economic profile

The socio-economic and demographic profile of the households were collected for micro planning and for the initiation of project activities among the neediest group/set of people. (Table-2)

The age of household members indicated that nearly 53% of the household members were in the age group of 18-49 years, 36% were below 18 years of age and 11% were above 50 years of age. The mean age of household members was 26 years. Further, the sex of household members among the sampled population shows nearly 50% each were males and females.

The segregation of households by religion indicates that 64% were Hindu, 33% were Muslim and 3% were Christians. A segregation of households by caste indicated that 20% of respondents were from a Scheduled Caste, 5% were from a Scheduled Tribe and others accounted for 75%.

Data on the monthly household income of the respondents indicates that 59% of the households' income ranged between Rupees 5000 and Rupees 14999, whereas nearly 34% of the households' income was above Rupees 15000. Nearly 4% of the households' income fell into the category of less than Rupees 5000. Almost 4% preferred not to mention their monthly household income.

An analysis of the demographic, social and economic indicators reflects that the project needs to strategize its activities considering the age group, religion and caste composition of the urban population. Another important aspect is that nearly 47% of the slum population was composed of children and the elderly. Nutritional support and Direct Benefit Transfers are some of the key benefits required for the patients in this category.

**Table 2: Profile of households**

| Characteristics | Total |
|---|---|
| **Age of household members** | |
| <18 | 36.4 |
| 18-49 | 53.1 |
| 50+ | 10.5 |
| Mean age | 25.7 |
| Number of cases | 2172 |
| **Sex of household members** | |
| Male | 49.8 |
| Female | 50.2 |
| Number of cases | 2173 |
| **Religion** | |
| Hindu | 64.1 |
| Muslim | 33.0 |
| Christian | 2.9 |
| Number of cases | 437 |
| **Caste/Tribe** | |
| Scheduled Caste | 20.1 |
| Scheduled Tribe | 4.8 |
| Others | 75.2 |
| Number of cases | 437 |
| **Monthly household income** | |
| < 5000 | 3.9 |
| 5000-14999 | 58.5 |
| 15000+ | 33.7 |
| Not mentioned | 3.8 |
| Mean household income | 13265.6 |
| **Number of cases** | **437** |
| **Total percent** | **100.0** |

# Household composition

The composition of 437 households indicates that nearly 78% of households were headed by a male member and the remaining 22% were headed by a female member. (Table-3)

The mean age of the household head was 42 years. Nearly 14% of the household heads were below 30 years of age, while 58% of the household heads were in the age group of 30-49 years. The remaining 28% of the household heads fell into the age category of 50 years and above.

Household structure data revealed that nearly 68% were nuclear families, and the remaining 32% were non-nuclear or joint families.

The mean household size was five members per family. Nearly 77% of the households were comprised of four or more members, and the remaining 23% of the households were comprised of 1-3 members.

Household composition is another set of information to be used while conducting community-level activities. The data on household heads among 437 households reflects a ratio of 78:22 (Male: Female) approximately. Ensuring equal representation of male and female community members would be an important consideration in the formation of structures such as support groups in the communities.

An analysis of the household composition further reveals that nearly 77% of the households were comprised of four or more members; cross analysis with the household facility (Table-4) showed that nearly 60% of the households used one room for sleeping, and 76% of households had inadequate ventilation. Under such circumstances, the chances of spreading TB or cross-infections is higher. There is therefore a need to work intensively among households with limited space and ventilation. Treatment adherence monitoring and testing of family members within this segment should be done on a priority basis.

**Table 3: Household composition**

| Characteristics | Total |
|---|---|
| **Sex of the household head** | |
| Male | 78.4 |
| Female | 21.6 |
| **Age of the household head** | |
| 20-29 | 13.6 |
| 30-49 | 58.2 |
| 50+ | 28.2 |
| Mean age | 42.3 |
| **Household structure** | |
| Nuclear | 68.2 |
| Non-nuclear | 31.8 |
| **Number of household member** | |
| 1 | 0.7 |
| 2 | 10.0 |
| 3 | 12.2 |
| 4 | 28.1 |
| 5 | 20.6 |
| 6+ | 28.3 |
| Mean number of household members | 5.0 |
| **Total percent** | **100.0** |
| **Number of cases** | **437** |

# Household facilities

Data on facilities available among 437 sampled households were collected. The data showed that nearly 80% of the households stayed in pucca houses, nearly 19% of the households stayed in semi-pucca houses and the remaining 1% stayed in kaccha houses. (Table-4)

Nearly 66% of the households said that they stayed in houses with 1-2 rooms and the remaining 34% of the households said that they stayed in houses with 3-4 rooms. Similarly, 60% of the households said that they use one room for sleeping, whereas nearly 33% of the households said that they use two rooms for sleeping. The remaining 7% of the households said that they use three or more rooms for sleeping.

Nearly 68% and 24% of the households had a window and proper ventilation, respectively. The remaining 32% and 76% of houses lacked a window and ventilation.

Nearly 56% of the respondents said that they owned their house, and the remaining 44% said that they stay in rented accommodation.

Data on entertainment and information sources were collected. Nearly 5% and 92% of the households owned a radio and a television, respectively.

Similarly, the availability of telephones and mobile phones was enquired into. Nearly 1% of the households said they have a telephone and 98% of the households said they own a mobile.

**Table 4: Household facilities**

| Characteristics | Total |
|---|---|
| **Type of house** | |
| Kaccha | 1.2 |
| Semi-pucca | 18.8 |
| Pucca | 79.9 |
| **Number of rooms** | |
| 1 | 24.8 |
| 2 | 40.8 |
| 3 | 22.2 |
| 4+ | 12.1 |
| **Number of rooms used for sleeping** | |
| 1 | 59.9 |
| 2 | 33.5 |
| 3 | 4.4 |
| 4+ | 2.2 |
| **Has BPL card** | |
| Yes | 79.3 |
| No | 20.7 |
| **House has window that can be opened** | |
| Yes | 68.1 |
| No | 31.9 |
| **Has ventilation facility** | |
| Yes | 24.2 |
| No | 75.8 |
| **Ownership of present house** | |
| Own house | 56.1 |
| Not own house | 43.9 |
| **Own a radio** | |
| Yes | 5.0 |
| No | 95.0 |
| **Own a telephone** | |
| Yes | 0.8 |
| No | 99.2 |
| **Own a mobile** | |
| Yes | 97.5 |
| No | 2.5 |
| **Own a television** | |
| Yes | 91.7 |
| No | 8.3 |
| **Total** | **100.0** |
| **Number of cases** | **437** |

# Profile of survey respondents

An analysis of the profile of survey respondents showed that nearly 38% of the respondents were male and 62% were female. (Table-5)

A categorisation of the respondents by age showed that the mean age of males and females was 37 and 33 years, respectively. Nearly 71% of the respondents were less than 40 years of age, 23% of them were in the 40-59 age group, and the remaining 6% of them were in the age group of 60 and above.

Nearly 77% of the respondents were married at the time 11% of them said that their marriage had dissolved, and the remaining 12% of them said and had never been married.

Literacy and education levels among the respondents showed that there were more respondents who had completed their middle school education. Nearly 53% of the respondents had completed middle school, another 24% were 'literate, middle incomplete', and the remaining 23% were illiterate.

The occupations of the male and female respondents were analysed. Nearly 11% of the respondents were in business, another 7% were in salaried jobs, 30% were doing other jobs, 44% were housewives, and the remaining 8% of the respondents were not working.

The monthly income of the respondents was analysed and the mean income of respondents was Rupees 4,371 per month. Nearly 51% of the respondents did not earn, 11% of them reported an income of less than Rupees 5000, 38% reported an income of above Rupees 5000, and less than 1% of them did not disclose their income.

**Table 5: Profile of survey respondents**

| Characteristics | Male | Female | Percentage |
|---|---|---|---|
| **Sex** | | | |
| Male | | | 37.8 |
| Female | | | 62.2 |
| **Age** | | | |
| < 40 | 63.8 | 74.8 | 70.7 |
| 40-59 | 29.1 | 20.1 | 23.5 |
| 60+ | 7.1 | 5.1 | 5.8 |
| Mean age | 37.0 | 33.2 | 34.6 |
| **Marital status** | | | |
| Currently married | 75.9 | 78.5 | 77.5 |
| Marriage dissolved | 3.4 | 15.1 | 10.7 |
| Never married | 20.6 | 6.4 | 11.8 |
| **Literacy & education** | | | |
| Illiterate | 20.3 | 25.1 | 23.3 |
| Literate, middle incomplete | 23.2 | 24.6 | 24.1 |
| Middle completed | 56.5 | 50.3 | 52.6 |
| **Occupation** | | | |
| Business | 22.5 | 4.2 | 11.1 |
| Salaried job | 16.8 | 0.5 | 6.7 |
| Other job | 50.3 | 17.1 | 29.7 |
| Housewife | 0.0 | 71.5 | 44.4 |
| Not working | 10.4 | 6.7 | 8.1 |
| **Personal Monthly income** | | | |
| No income | 10.4 | 75.8 | 51.0 |
| <5000 | 6.2 | 13.8 | 10.9 |
| 5000+ | 83.4 | 10.2 | 37.9 |
| Not mentioned | 0.0 | 0.3 | 0.2 |
| Mean income | 9745.6 | 1093.0 | 4371.2 |
| **Total** | **100.0** | **100.0** | **100.0** |
| **Number of cases** | **168** | **269** | **437** |

# 04

# HEALTH-RELATED INFORMATION

# Source of information

This section describes the sources of obtaining health-related information among the households. Nearly 75% of the respondents said that they obtained health-related information either through radio or television. The other important sources of health-related information were friends or relatives, newspapers and magazines, and health workers i.e., nearly 64%, 27%, and 27%, respectively. Other sources of availing health-related information included community meetings and web-based information, which accounted for 4% and 8%, respectively. (Table-6)

There is scope for improvement to disseminate health-related information among households at the community level. An intensive approach, which strengthens the capabilities of outreach teams (from the government and NGOs) to access the community and create awareness on TB and drug adherence, will fetch sustainable results.

**Table 6: Source of health-related information**

| Source of information | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Newspapers and magazines | 33.5 | 23.1 | 27.1 |
| Radio/TV | 78.8 | 72.5 | 74.8 |
| Billboards | 2.9 | 1.0 | 1.7 |
| Brochures, posters, other printed material | 1.9 | 1.3 | 1.5 |
| Health workers | 26.6 | 26.8 | 26.7 |
| NGO outreach workers | 1.0 | 1.2 | 1.1 |
| Community meetings | 3.9 | 4.0 | 3.9 |
| Video show in the community | 0.0 | 0.8 | 0.5 |
| Telephone helpline | 0.3 | 0.7 | 0.5 |
| Web-based information | 8.7 | 7.4 | 7.9 |
| Friends/relatives | 57.1 | 68.5 | 64.2 |
| Hospital | 2.1 | 1.1 | 1.5 |
| Other | 9.4 | 10.0 | 9.7 |
| **Total percent** | **100.0** | **100.0** | **100.0** |
| **Number of cases** | **165** | **272** | **437** |

# Type of health facility

Nearly 28% of the respondents said that their household members usually go to government health facilities (Government hospital/Municipal hospital/Government dispensary/Other facility) for treatment. Around 64% of the respondents said that they access private health facilities (hospitals/clinics) for treatment. (Table-7)

Looking at the patterns of health access in the community, it is essential to strengthen both the public and the private sector simultaneously, so that key messages on TB awareness and access to TB treatment are made available at the health facilities preferred by the community.

Respondents were asked their reasons for not getting treatment from a government health facility. Nearly 43% of the respondents said that the government health facility is far away, 42% of them cited long waiting times

and 37% mentioned poor quality of care as the reasons. Various other reasons for not accessing government health facilities include inconvenient facility timing and absent health personnel, accounting for 37% and 11%, respectively. A small section of respondents, nearly 6%, preferred not to give any reason. (Table-8)

**Table 7: Type of health facility from where household members mainly get treatment**

| Type of health facility | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Government/Municipal Hospital | 20.2 | 22.7 | 21.7 |
| Government Dispensary | 5.4 | 4.5 | 4.8 |
| UHC/UHP/UFWC | 0.0 | 1.1 | 0.7 |
| Other Public Sector Health Facility | 1.2 | 1.1 | 1.1 |
| NGO/Trust Hospital/Clinic | 0.6 | 0.4 | 0.5 |
| Private Hospital | 24.4 | 21.6 | 22.7 |
| Private Doctor/Clinic | 42.9 | 40.9 | 41.6 |
| Unqualified doctor | 5.4 | 7.4 | 6.6 |
| Pharmacy/Drug store | 0.0 | 0.4 | 0.2 |
| **Total percent** | **100.0** | **100.0** | **100.0** |
| **Number of cases** | **165** | **272** | **437** |

**Table 8: Reasons for not seeking treatment from government health facility**

| Reasons for not getting treatment | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Facility is far away | 42.3 | 42.6 | 42.5 |
| Facility timing not convenient | 39.8 | 35.8 | 37.4 |
| Health personnel often absent | 12.2 | 9.5 | 10.5 |
| Waiting time too long | 42.3 | 41.1 | 41.5 |
| Poor quality of care | 33.3 | 38.9 | 36.7 |
| No reason | 2.4 | 2.1 | 2.2 |
| **Other** | **4.9** | **7.4** | **6.4** |
| **Number of cases** | **123** | **204** | **327** |

# Health scheme/Health Insurance

The team enquired about health schemes and/or health insurance availed by the members of the household. Nearly 63% of the respondents said that the household members were covered under the State Health Insurance Scheme. A little over 5% of the households were covered under the Employees' State Insurance Scheme. Most other health schemes/health insurance run by the Central Government were accessed by less than 2% of the households. About 32% of the respondents said that the members of their household were not covered under any health scheme or insurance. (Table-9)

It is evident from the field data that there is immense scope to work towards connecting households with health schemes or health insurance from the central or state government. Access to health schemes and health insurance will largely address the need for funds to purchase drugs during treatment. Exploring the possibility of networking with insurance companies, to provide medical insurance to the urban population, would be a sustainable initiative.

**Table 9: Type of health scheme/ insurance covered by household members**

| Name of health scheme/insurance | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Employees' State Insurance Scheme (ESI) | 7.2 | 3.9 | 5.1 |
| Central Government Health Scheme (CGHS) | 0.0 | 0.7 | 0.4 |
| State Health Insurance Scheme | 69.9 | 58.1 | 62.6 |
| Rashtriya Swasthya Bima Yojana (RSBY) | 2.0 | 0.9 | 1.3 |
| Other Health Insurance through Employer | 2.4 | 0.8 | 1.4 |
| Medical Reimbursement from Employer | 1.2 | 0.8 | 0.9 |
| No health insurance | 22.6 | 37.3 | 31.8 |
| Have more than one insurance | 4.4 | 2.5 | 3.2 |
| **Total percent** | **100.0** | **100.0** | **100.0** |
| **Number of cases** | **165** | **272** | **437** |

# Personal habits

Personal habits of the respondents were analysed based on the collected data. Smoking cigarettes or beedis and drinking alcohol among the female respondents were found to be very low i.e., 0% and 2%, respectively. Among male respondents, nearly 30% were current or past smokers, and the remaining 70% of the males said that they did not have a smoking habit. Nearly 50% of the male respondents said that they drank alcohol, out of them 9% were daily alcohol drinkers. The remaining 50% of the male respondents said that they never drank. (Table-10)

Table 10: Personal habits such as smoking cigarettes and drinking alcohol

| Personal habits | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| **Smoke cigarettes/bidis** | | | |
| Current smoker | 25.0 | 0.0 | 9.5 |
| Past smoker | 5.3 | 0.2 | 2.1 |
| Never smoked | 69.7 | 99.8 | 88.4 |
| **Drink alcohol** | | | |
| Almost every day | 8.6 | 0.0 | 3.2 |
| About once a week | 23.6 | 0.4 | 9.1 |
| Less than once a week | 17.3 | 1.1 | 7.2 |
| Never | 50.5 | 98.6 | 80.4 |
| **Total percent** | **100.0** | **100.0** | **100.0** |

# Respondents with disease patterns

A few selected disease patterns among the respondents were analysed. Nearly 7% of the respondents said that they had diabetes, and 14% of them said that they had blood pressure or hypertension., At least one disease condition was reported by 17% of the respondents and more than one disease condition was reported by 4% of the respondents. (Table-11)

Similarly, a few selected disease patterns among the respondents were analysed according to age. Among the age group of 40-59 years, nearly 18% of the respondents had diabetes, about 29% of the group had hypertension and 1% of them had asthma. Among the age group of 60 and above, nearly half of the respondents had hypertension, and about 17% of the group had diabetes. (Table-12)

Table 11: Respondents who had ever suffered selected diseases

| Name of disease | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Diabetes | 10.3 | 4.9 | 6.9 |
| Asthma/Chronic respiratory disease | 0.8 | 0.0 | 0.3 |
| Cancer | 0.0 | 0.3 | 0.2 |
| Blood pressure/ Hypertension | 16.9 | 12.1 | 13.9 |
| At least one disease | 21.1 | 14.6 | 17.1 |
| More than one disease | 6.8 | 2.6 | 4.2 |
| **Number of cases** | **165** | **272** | **437** |

Table 12: Respondents who had ever suffered selected diseases, according to age

| Name of disease | Sex of the respondent | | |
|---|---|---|---|
| | <40 | 40-59 | 60+ |
| Diabetes | 2.3 | 18.2 | 17.4 |
| Asthma/Chronic respiratory disease | 0.0 | 1.2 | 0.0 |
| Cancer | 0.0 | 0.7 | 0.0 |
| Blood pressure/ Hypertension | 5.9 | 29.0 | 50.4 |
| At least one disease | 7.4 | 36.1 | 57.5 |
| More than one disease | 0.7 | 13.0 | 10.3 |
| **Number of cases** | **309** | **103** | **25** |

05

# KNOWLEDGE ABOUT KEY ASPECTS OF TB

This section provides the respondents' views on knowledge aspects of TB. Respondents were asked about 1) the mode of transmission of TB, (2) the confirmatory test for TB, (3) the place for testing, (4) the place to get treatment and (5) the duration of treatment, among other questions.

The respondents were asked about which disease condition a person is likely to have, if he/she has a persistent cough for two weeks or more. Nearly 43% of the respondents said TB, 60% of the respondents said seasonal cold, another 20% and 17% of the respondents said throat infection and viral fever, respectively. There were other responses which were relatively insignificant. (Table-13)

**Table 13: Disease condition if a person has a persistent cough for two weeks or more**

| Disease condition | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Throat Infection | 21.9 | 18.6 | 19.9 |
| Seasonal Cold | 58.7 | 60.3 | 59.7 |
| Viral Fever | 13.7 | 19.6 | 17.3 |
| Tuberculosis | 45.2 | 41.2 | 42.7 |
| Chest Congestion | 3.8 | 4.6 | 4.3 |
| Asthma/COPD | 1.3 | 5.2 | 3.7 |
| Others | 3.3 | 3.5 | 3.4 |
| Don't know/Can't say | 1.67 | 0.9 | 1.2 |
| **Total percent** | **100.0** | **100.0** | **100.0** |
| **Number of cases** | **165** | **272** | **437** |

## Knew or heard about TB and source of information

Nearly 84% of the respondents knew or had heard about TB. There was no noticeable variance on awareness about TB among male and female respondents. (Table-14)

Respondents within the age-group of 40-59 years had a comparatively low level of knowledge on TB. Respondents who had completed primary and middle school education had a significantly high level of knowledge on TB.

Although not significant, respondents who were in salaried jobs, currently married, non-Hindu, not from Scheduled Castes or Scheduled Tribes, and whose personal monthly income was more than Rupees 5000 were more likely to know and have heard about TB.

With regard to the classification of slum areas as per the programme, the number of respondents who knew or had heard about TB was highest in Secunderabad Zone (91%) and lowest in Central Zone (78%).

Table 14: Respondents who knew or had heard about TB, according to selected characteristics

| Characteristics | Percent | No. of cases | p-value |
|---|---|---|---|
| **Sex of the respondent** | | | |
| Male | 88.0 | 165 | |
| Female | 82.0 | 272 | 0.185 |
| **Age** | | | |
| < 40 | 86.3 | 309 | |
| 40-59 | 77.4 | 103 | |
| 60+ | 86.8 | 25 | 0.084 |
| **Marital status** | | | |
| Currently married | 85.8 | 339 | |
| Marriage dissolved | 77.4 | 47 | |
| Never married | 80.4 | 51 | 0.208 |
| **Literacy and education** | | | |
| Illiterate | 66.7 | 102 | |
| Literate middle incomplete | 86.1 | 105 | |
| Middle completed | 91.2 | 230 | <0.001 |
| **Occupation** | | | |
| Business | 78.1 | 49 | |
| Salaried job | 100.0 | 29 | |
| Other job | 84.1 | 130 | |
| Housewife | 83.3 | 194 | |
| Not working | 86.0 | 35 | 0.186 |
| **Religion** | | | |
| Hindu | 81.2 | 280 | |
| Non-Hindu | 89.7 | 157 | 0.053 |
| **Caste/Tribe** | | | |
| Scheduled Caste/ Scheduled Tribe | 80.9 | 109 | |
| Others | 85.4 | 328 | 0.246 |
| **Personal monthly income** | | | |
| < 5000 | 82.0 | 272 | |
| 5000+ | 88.0 | 165 | 0.210 |
| **Monthly household income** | | | |
| < 15000 | 83.0 | 290 | |
| 15000+ | 86.7 | 147 | 0.342 |
| **Slum areas according to program zones** | | | |
| Secunderabad Zone | 91.4 | 116 | |
| Central Zone | 78.3 | 121 | |
| Old City Zone | 84.7 | 81 | |
| New City Zone | 83.0 | 119 | 0.142 |
| **Total** | **84.3** | **437** | |

The respondents who knew about TB were asked about their source of information on TB. Nearly 62% of the respondents said that they came to know about TB through word of mouth from friends or relatives. About 42% of them said that they came to know about TB through television or radio. About 33%, 10% and 9% of the respondents said that they knew about TB because their friends or relatives had had it, through print media and from the workplace, respectively. (Table-15)

Only 12% of respondents said the source of information was the government frontline workers (DOTS provider, health worker, AWW).

**Table 15: Source of information on TB (among those who knew or had heard about TB)**

| Source of information on TB | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Television/ Radio | 42.9 | 40.8 | 41.6 |
| Newspaper/ Magazine | 12.8 | 7.9 | 9.9 |
| Posters/ Banners/ Hoardings/ Campaigns | 2.6 | 1.2 | 1.7 |
| Word of Mouth from Friends / Relatives | 62.0 | 62.5 | 62.3 |
| TB among Friends/Relatives | 33.2 | 33.1 | 33.1 |
| DOTS Provider/Health Worker | 9.2 | 10.4 | 9.9 |
| Anganwadi Worker | 0.7 | 2.7 | 1.9 |
| Community Meetings | 2.5 | 1.8 | 2.1 |
| Workplace | 14.9 | 4.5 | 8.6 |
| Schools/ Teachers | 3.0 | 7.7 | 5.8 |
| Religious leaders | 0.3 | 0.0 | 0.1 |
| Political leaders | 0.6 | 0.0 | 0.2 |
| Respondent Had TB | 2.1 | 1.9 | 2.0 |
| **Others** | **9.2** | **8.2** | **8.6** |
| **Number of cases** | **145** | **223** | **368** |

## Mode of transmission of TB

The respondents were asked about the mode of transmission of TB. Nearly 71% of the respondents said that it spreads through air when a person with TB coughs or sneezes. About 22% of the respondents said that they did not know or couldn't say what the mode of transmission of TB is. A few other modes of transmission mentioned by the respondents were found to be irrelevant or insignificant. (Table-16)

Information dissemination at the grass-root level through frontline workers and through electronic/print media/ information education and communication (IEC) materials can be intensified to ensure that the modes of transmission of TB are known in the community.

Table 16: Mode of transmission of TB from one person to another

| Mode of TB transmission | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Through the air when a person with TB Coughs/ Sneezes | 75.2 | 68.6 | 71.1 |
| Sharing Utensils | 34.8 | 39.9 | 38.0 |
| Touching a person with TB | 12.0 | 8.2 | 9.6 |
| Food | 24.2 | 27.7 | 26.4 |
| Sexual Contact | 5.1 | 4.6 | 4.8 |
| Mosquito Bites | 5.0 | 0.8 | 2.4 |
| Stepping on Sputum | 12.3 | 5.8 | 8.2 |
| Other | 1.7 | 2.1 | 1.9 |
| Don't Know/Can't say | 18.2 | 24.3 | 22.0 |
| Total percent | 100.0 | 100.0 | 100.0 |
| Number of cases | 165 | 272 | 437 |

Respondents were asked about the part of the body most likely to be affected by TB. Nearly 44% of the respondents said that the lung was part most likely to be affected by TB. Another 36% of the respondents said that they did not know or couldn't say. There were other responses which were least significant. (Table-17)

Awareness among the community about the effect of TB on parts of human body is limited. A large number of respondents did not know about it.

Table 17: Awareness of the part of the body most affected by TB

| Part of the body | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Lung | 47.8 | 41.2 | 43.7 |
| Bones | 4.8 | 4.9 | 4.9 |
| Lymph nodes | 0.7 | 1.1 | 0.9 |
| Abdomen | 1.4 | 1.5 | 1.5 |
| Brain | 0.5 | 0.8 | 0.7 |
| Any part of the body | 4.1 | 4.7 | 4.4 |
| Other | 4.8 | 1.1 | 2.5 |
| Don't know/ Can't say | 36.2 | 36.2 | 36.2 |
| Number of cases | 165 | 272 | 437 |

Nearly 58% of the respondents said that cough was the most common symptom of lung TB, another 11% and 9% of them reported that weight loss and weakness, respectively, are the most common symptoms. About 16% of the respondents did not know the symptoms of lung TB. (Table-18)

Overall, it was found that nearly three-fifths of the respondents knew about symptoms of lung TB. A little over two-fifths of the respondents did not know or did not mention the common symptoms of lung TB. There is scope to build awareness in the community about the symptoms and effects of TB through community-level IEC initiatives .

**Table 18: Most common symptom of lung TB**

| Most common symptom of lung TB | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Cough | 58.9 | 57.1 | 57.7 |
| Fever | 2.9 | 0.9 | 1.7 |
| Night sweats | 0.0 | 0.3 | 0.2 |
| Weight loss | 9.6 | 11.1 | 10.5 |
| Weakness | 12.5 | 6.4 | 8.7 |
| Chest pain | 0.0 | 0.6 | 0.3 |
| Others | 4.2 | 5.7 | 5.1 |
| Don't know/Can't say | 12.1 | 18.0 | 15.7 |
| Number of cases | 165 | 272 | 437 |

## Confirmatory test for TB

The respondents' knowledge on for TB was analysed. Nearly 62% of the respondents said the sputum test was a confirmatory test, while 60% and 75%, respectively, mentioned X-rays and blood tests. Nearly 20% and 13% of the respondents said that the confirmatory tests were the Mantoux test and tissue biopsy, respectively. (Table-19)

A little over three-fifths of the respondents knew about the confirmatory test for TB. The remaining respondents were not sure about the specific test done for confirmation of TB.

**Table 19: Specific confirmatory test for TB**

| Test reported | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| X-ray of the chest | 63.4 | 58.5 | 60.3 |
| Sputum test | 68.9 | 58.3 | 62.3 |
| Blood test | 77.7 | 73.1 | 74.9 |
| Mantoux tuberculin/skin test | 16.7 | 21.4 | 19.6 |
| Tissue biopsy | 12.7 | 13.4 | 13.1 |
| Other test | 24.6 | 20.5 | 22.0 |
| Number of cases | 165 | 272 | 437 |

# TB testing centre

The respondents mentioned various places where there is testing and for TB. The classification of testing centres into government and private sector centres provided the following inferences.

Nearly 52%, 51%, 20% and 2% of the respondents said that TB testing could be done at the Municipal Corporation Hospital, the Government TB hospital, other government hospitals and Designated Microscopy Centres (DMCs), respectively. Similarly, 48% and 4% of the respondents said that testing could be done at private hospitals and private clinics, respectively. About 18% of the respondents did not know or couldn't say about the testing centres. (Table-20)

DMCs are lesser known among the respondents. There is a need for greater emphasis to be laid on appropriate testing facilities such as the nearest DMC for the communities.

**Table 20: Place where adults can be tested for TB**

| Place for TB testing | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Municipal Corporation Hospital | 49.0 | 53.9 | 52.1 |
| Government TB Hospital | 60.3 | 45.0 | 50.8 |
| Medical College | 0.0 | 0.4 | 0.3 |
| Other Government Hospital | 16.5 | 22.4 | 20.2 |
| Designated Microscopy Centre | 2.1 | 1.1 | 1.5 |
| Private Hospital | 54.9 | 43.3 | 47.7 |
| Private Clinic | 4.6 | 4.0 | 4.2 |
| AYUSH hospital/clinic | 0.0 | 0.5 | 0.3 |
| Any Private Lab | 11.6 | 16.8 | 14.9 |
| Others | 0.0 | 0.5 | 0.3 |
| Don't know/Can't say | 13.5 | 20.5 | 17.8 |
| Number of cases | 165 | 272 | 437 |

# TB treatment – place, cost, duration, facts

The respondents were asked about the place where treatment for TB is available. Nearly 70%, 23%, 15%, 13% and 8% of the respondents mentioned the Municipal hospital, TB hospital, other public health facilities, ESI hospitals and the government dispensary, respectively, as the place for treatment for TB. About 46% and 1% of the respondents said private hospitals and private clinics, respectively, were the places to get treatment for TB. (Table-21)

Another 18% of the respondents said that they did not know or couldn't say about the place of treatment for TB. Other types of health facilities were mentioned by the respondents but they were insignificant in number.

It is important to focus on respondents who do not know where to go for TB treatment, and on those respondents who mentioned options such as home remedies.

Table 21: Place where treatment for TB is available

| Place of treatment for TB | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Municipal Hospital | 72.0 | 69.0 | 70.2 |
| Government Dispensary | 8.7 | 7.2 | 7.7 |
| UHC/UHP/UFWC | 2.0 | 1.8 | 1.9 |
| Government TB Hospital | 28.5 | 19.6 | 23.0 |
| DOTS Centre | 1.8 | 1.4 | 1.6 |
| ESI Hospital | 16.5 | 10.6 | 12.8 |
| Other Public Sector Health Facility | 12.0 | 17.1 | 15.2 |
| NGO or Trust Hospital/Clinic | 0.8 | 0.5 | 0.6 |
| Private Hospital | 51.0 | 43.1 | 46.0 |
| Private Doctor/Clinic | 1.0 | 1.1 | 1.1 |
| Unqualified doctor | 0.9 | 0.9 | 0.9 |
| Other private sector health facility | 0.5 | 0.4 | 0.5 |
| Home Treatment | 0.0 | 0.3 | 0.2 |
| Don't Know/Can Not Say | 13.3 | 21.0 | 18.0 |
| Number of cases | 165 | 272 | 437 |

Treatment cost and treatment duration are influencing factors that have a direct impact on drug adherence and loss to follow-up.

Regarding the cost of treatment, nearly 52% of the respondents said that there is no cost for TB treatment, while 37% of them said that they did not know or couldn't say. About 7% of the respondents said that the cost of treatment was Rupees 10000 or more. (Table-22)

The duration of treatment for TB is crucial and critical for cure. Nearly 34% of the respondents did not know or couldn't say about the duration of treatment. A little over 31% and 15% of the respondents mentioned that the duration was six months and more than six months, respectively. The remaining 21% of them said that treatment was of a duration of less than six months.

Knowledge about the cost and duration of treatment was minimal among the respondents. The cost and duration should be known to the respondents and households, as it will have a direct impact on drug adherence and the loss to follow-up.

Table 22: Cost and duration of treatment for TB

| Cost/duration of treatment | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| **Cost of treatment** | | | |
| No cost | 57.9 | 47.5 | 51.5 |
| 1 - 9999 | 5.1 | 5.2 | 5.2 |
| 10000+ | 9.0 | 5.5 | 6.8 |
| Don't know/Can't say | 28.0 | 41.8 | 36.5 |
| **Duration of treatment** | | | |
| <6 months | 24.2 | 18.2 | 20.5 |
| 6 months | 29.8 | 31.9 | 31.1 |
| 6+ months | 19.0 | 12.4 | 14.9 |
| Don't know/Can't say | 27.0 | 37.5 | 33.5 |
| Number of cases | 165 | 272 | 437 |

Awareness among the respondents was assessed on two more aspects- firstly, whether or not TB is fully curable and secondly, whether all TB patients need admission in hospital for treatment.

Nearly 68% of the respondents either agreed or strongly agreed with the statement that "TB is fully curable". Another 19% of the respondents did not know or couldn't say. About 5% of the respondents either disagreed or strongly disagreed with the statement. (Table-23)

About 46% of the respondents either agreed or strongly agreed with the statement that "All TB patients need admission in hospital for treatment". Another 18% of the respondents did not know or couldn't say. About 23% of the respondents either disagreed or strongly disagreed with the statement.

**Table 23: TB is fully curable and all TB patients need admission in hospital for treatment**

| Statement | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| **TB is fully curable** | | | |
| Strongly agree | 34.1 | 36.7 | 35.7 |
| Agree | 35.9 | 29.3 | 31.8 |
| Neither agree nor disagree | 9.6 | 8.9 | 9.2 |
| Disagree | 4.2 | 2.7 | 3.3 |
| Strongly disagree | 1.7 | 1.3 | 1.4 |
| Don't know/Can't say | 14.4 | 21.1 | 18.6 |
| **All TB patients need admission in hospital for treatment** | | | |
| Strongly agree | 25.4 | 23.1 | 24.0 |
| Agree | 25.2 | 20.3 | 22.1 |
| Neither agree nor disagree | 17.3 | 10.5 | 13.1 |
| Disagree | 14.0 | 21.4 | 18.6 |
| Strongly disagree | 3.5 | 4.3 | 4.0 |
| Don't know/Can't say | 14.6 | 20.4 | 18.2 |
| Number of cases | 165 | 272 | 437 |

Respondents were also asked a question on what could happen to a TB patient, if he or she did not complete full course of treatment. Nearly 73% of the respondents said that an incomplete course of treatment would lead to more illness. 62% of them said that it may lead to death, and about 60% of them said that the disease would not be cured. A relatively small number of respondents i.e., nearly 18%, 9%, 9% and 8% said that an incomplete course of treatment would lead to the spread of TB, an increase in duration of treatment, the medicines to stop working, and an increase in the cost of treatment, respectively. (Table-24)

Most of the respondents were clear about the consequences of not adhering to the full course of treatment. A few respondents said that it would lead to the spread of TB to others. To strengthen the level of awareness and treatment adherence, it is essential to disseminate information on treatment adherence and course completion.

The respondents who knew or had heard about TB were asked about disclosure of TB status.

**Table 24: Problems associated with incomplete treatment by TB patients (among those who reported at least one disease with long term treatment)**

| Statement | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Nothing will happen | 1.0 | 0.5 | 0.7 |
| Spread of TB to others | 15.9 | 19.9 | 18.3 |
| Disease will not be cured | 57.6 | 61.2 | 59.8 |
| Medicines will stop working | 7.7 | 9.0 | 8.5 |
| MDR TB can develop | 1.3 | 0.5 | 0.8 |
| More illness | 69.9 | 74.7 | 72.8 |
| Death | 61.5 | 62.6 | 62.2 |
| Hospitalisation | 2.6 | 3.7 | 3.3 |
| Cost of treatment increase | 8.5 | 8.0 | 8.2 |
| Duration of treatment increase | 10.8 | 7.7 | 9.0 |
| Others | 4.5 | 1.2 | 2.5 |
| Don't know/Can't say | 0.7 | 1.8 | 1.4 |
| Number of cases | 145 | 223 | 368 |

Nearly 82% of the respondents said that a TB patient should disclose his or her status to the spouse. About 81% of them said that the status should be disclosed to parents. About 68%, 38% and 28% of the respondents said that a TB patient should disclose his or her status to doctors, children and siblings, respectively. Only 1% of the respondents did not know or couldn't say to whom a TB patient should disclose his or her status. (Table-25)

**Table 25: Persons to whom a TB patient should disclose that he/she has TB (among those who knew about or had heard about TB)**

| Disclosed to | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Doctor | 67.3 | 67.7 | 67.6 |
| Spouse - wife/ husband | 78.2 | 84.6 | 82.1 |
| Children - son/ daughter | 30.1 | 43.0 | 37.9 |
| Parents - mother/ father | 74.3 | 85.7 | 81.2 |
| Siblings - brother/ sister | 26.9 | 28.6 | 27.9 |
| Aunt/ uncle | 0.0 | 0.4 | 0.2 |
| Other relatives | 6.5 | 8.5 | 7.7 |
| Friends | 25.9 | 15.3 | 19.5 |
| School mates | 0.7 | 0.0 | 0.3 |
| Boss | 3.5 | 1.2 | 2.1 |
| Neighbours | 0.7 | 1.7 | 1.3 |
| Nobody | 2.0 | 5.2 | 3.9 |
| Don't know/Can't say | 2.8 | 0.1 | 1.2 |
| Number of cases | 145 | 223 | 368 |

Respondents were probed on the reason for a TB patient to disclose his or her status.

Nearly 81% of the respondents said that the TB patient should disclose his or her status for quick treatment. Similarly, 74% and 59% of them said that the TB patient should disclose his or her status to receive family support and treatment support, respectively. About 32% and 23% of the respondents said that the TB patient should disclose his or her status for emotional and financial support, respectively. Only 15% of the respondents said that the TB patient should disclose their status to prevent the spread of TB. (Table-26)

While knowledge with regard to disclosure of TB status is present among the respondents, there is a need to further sensitize the respondents on one of the most important reasons for disclosure of status i.e., to prevent the spread of TB.

**Table 26: Reason for disclosure of positive TB status (among those who reported that a person should disclose his or her TB status)**

| Reason for disclosure | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Quick treatment | 85.9 | 78.5 | 81.4 |
| Prevent spread | 17.5 | 12.7 | 14.6 |
| Emotional support | 26.7 | 34.7 | 31.5 |
| Family support | 70.4 | 76.8 | 74.3 |
| Treatment support | 47.7 | 66.4 | 59.0 |
| Financial support | 29.3 | 19.5 | 23.4 |
| Other | 1.8 | 3.4 | 2.8 |
| Number of cases | 145 | 223 | 368 |

Similarly, the respondents who knew or heard about TB were asked about non-disclosure of TB status.

Nearly 69% of the respondents said that a TB patient should not disclose his or her status to neighbours. About 57% of them said that a TB patient should not disclose his or her status to relatives, and about 30% of them said that a TB patient should not disclose his or her status to friends. (Table-27)

About 13% of the respondents said that they did not know or couldn't say.

**Table 27: Persons to whom patients should not disclose TB status (among those who knew about TB)**

| Should not be disclosed to | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Spouse - wife/ husband | 0.0 | 1.3 | 0.8 |
| Children - son/ daughter | 10.2 | 8.1 | 8.9 |
| Siblings - brother/ sister | 1.8 | 3.0 | 2.5 |
| Aunt/ uncle | 2.5 | 1.7 | 2.0 |
| Other relatives | 53.3 | 58.8 | 56.6 |
| Friends | 28.3 | 31.2 | 30.0 |
| School mates | 1.6 | 2.0 | 1.8 |
| Co-workers | 17.6 | 8.1 | 11.8 |

| Should not be disclosed to | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Boss | 8.3 | 5.4 | 6.6 |
| Neighbours | 69.3 | 69.1 | 69.2 |
| School authorities | 1.1 | 1.0 | 1.1 |
| Anybody | 4.4 | 1.6 | 2.7 |
| Other | 2.2 | 3.5 | 3.0 |
| Don't know/Can't say | 12.0 | 13.5 | 12.9 |
| Number of cases | 145 | 223 | 368 |

The reasons for non-disclosure of TB status were explored among the respondents who reported that a TB patient should not disclose his or her status. Nearly 81% of the respondents said that the TB patient should not disclose his or her status because people in the community will avoid him or her. 51% of them said that their family name would be spoiled, and about 25% of them said that the people in the community would try to drive him or her out. Loss of employment was one of the reasons reported by 9% of the respondents. (Table-28)

**Table 28: Reasons for not disclosing TB status (among those who reported that one should not disclose it)**

| Reason for non-disclosure | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Our family name will be spoiled | 50.9 | 50.8 | 50.8 |
| People in the community will avoid him/her | 76.6 | 83 | 80.5 |
| People in the community will try to drive him/her out | 25.5 | 24.9 | 25.2 |
| Loss of job | 12.4 | 6.4 | 8.8 |
| Other | 8.1 | 3.1 | 5.1 |
| Number of cases | 128 | 193 | 321 |

Respondents were probed on the ways to prevent TB within the family or community. Nearly 71% of the respondents mentioned covering the mouth and nose while coughing. Another 53%, 21% and 20% of the respondents mentioned wearing a mask, good nutrition, and prompt diagnosis and treatment, respectively. About 20% of the respondents did not know or couldn't say what the ways to prevent TB were. (Table-29)

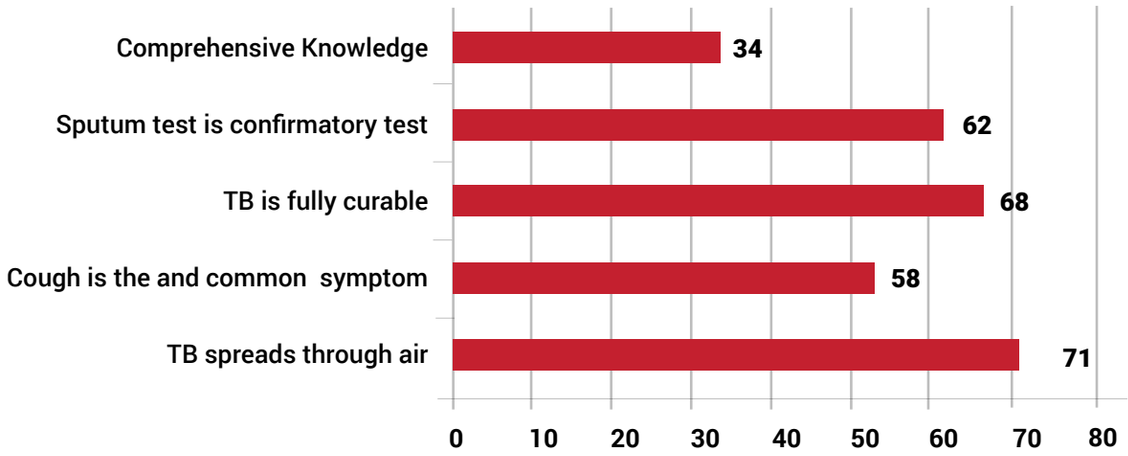
Table 29: Ways to prevent TB within family or community

| Ways to prevent spread of TB | Sex of the respondent | | |
|---|---|---|---|
| | Male | Female | Total |
| Covering mouth and nose while coughing | 57.4 | 62.5 | 60.1 |
| Wearing mask | 48.6 | 42.5 | 45.3 |
| Good ventilation | 4.7 | 3.5 | 4.1 |
| Prompt diagnosis and treatment | 17.3 | 12.2 | 14.6 |
| Vulnerable persons like children to take medicines to prevent TB | 2.0 | 3.9 | 3.0 |
| Good nutrition | 15.5 | 11.6 | 13.4 |
| Other | 16.1 | 16.6 | 16.3 |
| Don't Know/Can Not Say | 26.4 | 28.6 | 27.6 |
| Number of cases | 198 | 229 | 427 |

# Comprehensive knowledge

We estimated a composite index on knowledge about TB based on four indicators to represent comprehensive knowledge on TB. The components of the comprehensive knowledge included the facts that 1) TB spreads through air when a person with TB coughs or sneezes, 2) cough is the most common symptom of lung TB, 3) sputum test is the confirmatory test for TB, and 4) that TB is fully curable. Although about 84% of the adults had heard of or knew about TB, only 34% had comprehensive knowledge. Among the four different components of comprehensive knowledge, the highest proportion of respondents knew about TB spreading through air (71%), followed by knowing TB is fully curable (68%) and that the sputum test is a confirmatory test (62%); the least proportion of respondents reportedly knew cough as the most common symptom of lung TB (58%).

Figure-1: Percentage of adult persons with comprehensive knowledge of TB



The information on the distribution of respondents with comprehensive knowledge, according to selected socio-demographic characteristics, is given in Table-30. Comprehensive knowledge was found to be higher among respondents aged between 40-59 years (40%), who had never married (49%), who had completed middle school or above (38%), who were not working (49%), who belong to the Hindu religion (35%), who have a personal monthly income of Rupees 5000 and above (35%) and who have a monthly household income of Rupees 15000 and above (37%).

Although not significant, the result indicated that respondents in Secunderabad zone (39%) had a higher comprehensive knowledge of TB, and respondents in the Central and Old City zones (30%) had a lower comprehensive knowledge of TB.

**Table 30: Percentage distribution of adults who had comprehensive knowledge of TB**

| Characteristics | Percent | Number. of cases | p-value |
|---|---|---|---|
| **Sex of the respondent** | | | |
| Male | 35.9 | 165 | |
| Female | 32.1 | 272 | 0.477 |
| **Age** | | | |
| < 40 | 31.7 | 309 | |
| 40-59 | 39.6 | 103 | |
| 60+ | 31.5 | 25 | 0.366 |
| **Marital status** | | | |
| Currently married | 31.2 | 339 | |
| Marriage dissolved | 33.7 | 47 | |
| Never married | 48.6 | 51 | 0.074 |
| **Literacy and education** | | | |
| Illiterate | 27.4 | 102 | |
| Literate, middle incomplete | 29.7 | 105 | |
| Middle completed | 38.0 | 230 | 0.176 |
| **Occupation** | | | |
| Business | 34.7 | 49 | |
| Salaried job | 30.6 | 29 | |
| Other job | 32.8 | 130 | |
| Housewife | 31.3 | 194 | |
| Not working | 49.1 | 35 | 0.473 |
| **Religion** | | | |
| Hindu | 34.5 | 280 | |
| Non-Hindu | 31.8 | 157 | 0.582 |
| Caste/Tribe | | | |
| Scheduled Caste or scheduled tribe | 30.9 | 109 | |
| Others | 34.4 | 328 | 0.519 |
| **Personal monthly income** | | | |
| < 5000 | 32.5 | 271 | |
| 5000+ | 35.1 | 166 | 0.616 |

| Characteristics | Percent | No. of cases | p-value |
|---|---|---|---|
| Household monthly income | | | |
| < 15000 | 31.9 | 290 | |
| 15000+ | 36.8 | 147 | 0.291 |
| Slum areas according toprogramme zones | 39.3 | 116 | |
| Secunderabad zone | 29.8 | 121 | |
| Central zone | 29.8 | 81 | |
| Old city zone | 34.2 | 119 | |
| New city zone | 33.5 | 437 | 0.515 |
| Total | 33.5 | 437 | |

*Note: Comprehensive knowledge includes the fact that cough is the most common symptom of lung TB, TB spreads through air, sputum test is the confirmatory test for TB, and TB is curable.*

We also conducted separate multivariate logistic regression models to identify the socio-demographic factors that influence knowledge of TB, as well as comprehensive knowledge of TB. The multivariate logistic model included only the variables that had shown a significance level of below 20% in the bivariate analysis.

**Table 31: Results of multivariate logistic regression for those who knew or had heard of TB**

| Characteristics | Odds ratio | CI [95%] | p-value |
|---|---|---|---|
| Sex of the respondent | | | |
| Male | 1.00 | | |
| Female | 0.77 | [0.37-1.61] | 0.488 |
| Age | | | |
| < 40 | 1.00 | | |
| 40-59 | 0.73 | [0.42-1.27] | 0.253 |
| 60+ | 2.09 | [0.71-6.13] | 0.175 |
| Literacy and education | | | |
| Illiterate | 1.00 | | |
| Primary complete, middle incomplete | 2.80 | [1.33-5.87] | 0.008 |
| Middle completed | 4.92 | [2.40-10.06] | <0.001 |
| Occupation | | | |
| Business/Salaried job | 1.00 | | |
| Other job | 1.28 | [0.59-2.75] | 0.519 |
| Not working | 0.96 | [0.42-2.20] | 0.918 |
| Religion | | | |
| Hindu | 1.00 | | |
| Non-Hindu | 2.06 | [0.95-4.46] | 0.067 |
| Slum areas according to program zones | | | |
| Secunderabad Zone | 1.00 | | |
| Central Zone | 0.37 | [0.12-1,13] | 0.081 |
| Old city Zone | 0.58 | [0.18-1.86] | 0.357 |
| New city Zone | 0.50 | [0.15-1.62] | 0.241 |

The results of the multivariate logistic regression for the knowledge of TB among adults are provided in Table 31. Six variables, including sex, age, literacy and education, religion, occupation and slum areas according to program zones were found to be associated with knowledge of TB at the level less than 20%. We noticed a positive and significant relationship between knowledge of TB and literacy and education, when other variables were accounted for. Similarly, non-Hindus were significantly more likely to have knowledge of TB than Hindus, with significance level of below 10% level. However, respondents from the Central zone were less likely to have knowledge of TB at below 10% level as compared to respondents from Secunderabad zone. We did not identify any other significant association between knowledge of TB and other variables considered in the logistic regression model.

The results of the multivariate logistic regression for comprehensive knowledge of TB among respondents is given in Table 32.

Only two variables, marital status and literacy and education, were found to be significantly associated with comprehensive knowledge at level less than 20% in the bivariate analysis and were included in the multivariate logistic regression model. Although we found a positive association between comprehensive knowledge and literacy and education, its effect was not statistically significant when marital status was controlled for. However, as per the multivariate logistic regression, only adults who had never married were likely to have more comprehensive knowledge of TB, as compared to adults who were currently married at a significance level of below 10% level.

**Table 32: Results of multivariate logistic regression for comprehensive knowledge of TB**

| Characteristics | Odds ratio | CI [95%] | p-value |
|---|---|---|---|
| **Marital status** | | | |
| Currently married | 1.00 | | |
| Marriage dissolved | 1.37 | [0.84-2.23] | |
| Never married | 1.94 | [0.94-4.01] | 0.203 |
| **Literacy and education** | | | 0.071 |
| Illiterate | 1.00 | | |
| Literate, middle incomplete | 1.19 | [0.64-2.18] | 0.566 |
| Middle complete | 1.64 | [0.87-3.10] | 0.124 |

# Key findings and scope

| Sl. No. | Findings | Scope |
|---|---|---|
| 1 | The main source of information on TB is friends and relatives, especially if there has been an experience of TB in the family.<br>However, health related information is accessed through radio/television. | Use of community platforms like patient support groups as a means of disseminating knowledge to caregivers and influencing treatment retention for the TB patient.<br>the preferred method is TV/Radio, but most respondents reported having mobile phones.<br><br>It is possible to support the government in designing easy-to-access information apps for mobiles with key messaging on TB. |
| 2 | Private health facilities are accessed by the households more than public health facilities. | There is scope to strengthen public facilities, as these facilities are accessed less by the households of urban slums when compared to private facilities. It is important to ensure that access to TB treatment and information is made possible at the preferred point of access. |
| 3 | Government health facilities are not used by nearly 70% of the households due to lack of accessibility and issues around quality of care provided. | To strengthen quality standards within government health facilities, and promote patient-centric approaches, thereby improving case reporting at government health facilities. |
| 4 | About one-third of the households are not covered under the government health schemes or health insurance. | To create linkages with government health schemes or health insurance ensuring 100% coverage of all households, thereby facilitating access to free medicines and treatment for all. |
| 5 | Alcohol consumption at least once a week prevails among one-third of the male respondents. | Alcohol consumption adversely affects TB drug adherence. A communication and behavior change strategy to intensively engage with communities and patients to prevent and stop alcohol consumption is needed. Ensuring family-level care and support towards modification of lifestyles is essential. |
| 6 | Knowledge of TB is higher among household respondents who are within 40 years of age and educated. | At the community level, engaging and building TB champions as advocates for awareness building would be a sustainable approach towards bridging information gaps |
| 7 | The involvement of government FLWs as sources of information on TB is very low. | Involvement of government FLWs in capacity building, outreach and sensitization sessions is important to ensure convergence and collective ownership among all health workers at community level. This will help strengthen the awareness generation efforts and referral mechanisms at the grass-root level. |

| Sl. No. | Findings | Scope |
|---|---|---|
| 8 | About one-fourth of the respondents are not familiar with the mode of transmission of TB. | Targeted awareness building activities through FLWs at the urban slums on topics like TB symptoms and modes of transmission, confirmatory tests, available testing centres, treatment, myths and misconceptions, treatment adherence and disclosure of TB are essential to increase knowledge on TB among communities.<br><br>Use of ICT is recommended to disseminate the key messages on TB.<br><br>Success stories of TB survivors should be shared to create behaviour change amongst target populations. |
| 9 | More than one-third of the respondents are not familiar with the effect of TB on parts of the human body. | |
| 10 | Around two-fifths of the respondents do not know or could not mention the common symptom of lung TB. | |
| 11 | Nearly two-fifths of the respondents are not sure about the specific test done for confirmation of TB. | |
| 12 | Around one-fifth of the respondents do not know about TB testing centres. The DMC is lesser-known among the respondents. | |
| 13 | Nearly one-fifth of the respondents do not know about the place of treatment for TB. | |
| 14 | A little over two-thirds of the respondents do not know about the duration of TB treatment. | |
| 15 | About one-third of the respondents do not know that TB is curable. | |
| 16 | About one-fifth of the respondents do not know the ways to prevent TB. | |
| 17 | A little over two-thirds of the respondents do not have comprehensive knowledge on TB | |

# Baseline Status – Key Indicators

| Sl. No. | Indicator | % |
|---|---|---|
| **Awareness about TB** | | |
| 1 | % of adults who knew or had heard about TB | 84 |
| 2 | % of adults who knew about the mode of transmission of TB | 71 |
| 3 | % of adults who knew about the most common symptom of lung TB | 58 |
| 4 | % of adults who knew that the sputum test is the confirmatory test for TB | 62 |
| 5 | % of adults who knew about TB testing centers (MCH, TB-H,GH & DMC) | 80 |
| 6 | % of adults who knew about TB treatment -Hospital (Government Hospital) | 81 |
| 7 | % of adults who knew that TB treatment is free of cost | 52 |
| 8 | % of adults who knew that TB treatment lasts for six months | 31 |
| 9 | % of adults who knew that TB is fully curable | 68 |
| 10 | % of adults who knew the need to disclose TB status to spouse (among those who knew or had heard of TB) | 82 |
| 11 | % of adults who knew that TB patients should disclose their status to prevent the infection (among those who knew or heard of TB) | 15 |
| 12 | % of adults who knew how to prevent the spread of TB (maintaining cough hygiene) | 71 |
| **13** | **% of adults who had comprehensive knowledge of TB** | **34** |

KHPT
IT/BT Park, 5th Floor
#1-4, Rajajinagar Industrial Area
Behind KSSIDC Administrative Office
Rajajinagar, Bengaluru - 560 044

T: +91 80 4040 200 F: +91 80 4040 300 W: www.khpt.org E: khptblr@khpt.org