Knowledge about TB among Adult Populations Living in Urban Slums of Bengaluru

A Baseline Study Report: 2016-17

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ACRONYMS

AWW	Anganwadi Worker
BL	Base-line
CGHS	Central Government Health Scheme
CS	Chest Symptomatic (person with symptoms of pulmonary TB)
DMC	Designated Microscopy Centre
DOTS	Directly Observed Treatment, Short Course
ESI	Employees' State Insurance
FLW	Front-line Workers / Field Level Workers
GH	Government Hospital
GoI	Government of India
HIV	Human Immunodeficiency Virus
IEC	Information Education and 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
RSBY	Rashtriya Swasthya Bima Yojana
SSM	Sputum Smear Microscopy
STCI	Standards for TB Care in India
TB	Tuberculosis
TBAI	TB Alert India
TB-H	TB Hospital
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 Bengaluru/Hyderabad in order 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), Bengaluru. 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.

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ACKNOWLEDGEMENTS

01

INTRODUCTION

Background

India accounts for **one-fourth** of the global TB burden

India accounts for one-fourth of the global burden of tuberculosis (TB). In 2015, there were an estimated 28 lakh new cases in the country, and 4.8 lakh people died from TB.

India has the highest burden of both TB and multi-drug resistant TB (MDR TB) in the world, based on estimates reported in the Global TB Report 2016. An estimated 1.3 lakh new cases of MDR TB occur annually in India, including 79000 MDR TB Patients estimated among notified cases of pulmonary TB. India has the second highest number of estimated HIV-associated TB cases in the world. An estimated 1.1 lakh cases of HIV-associated TB cases occurred in 2015 and about 37000 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, rates of both TB incidence and mortality have decreased 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

289 lakh/year

217 lakh/year

→

2000   YEAR   **2015**

MORTALITY DUE TO TB

56 lakh/year

36 lakh/year

→

2000   YEAR   **2015**
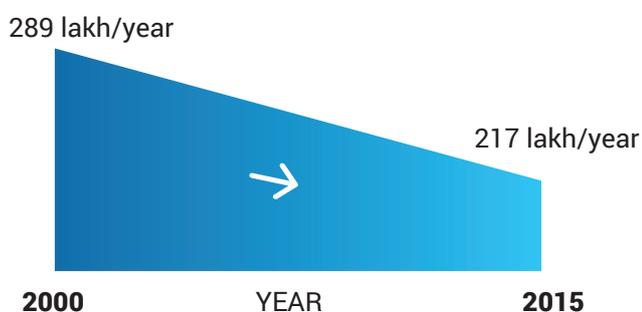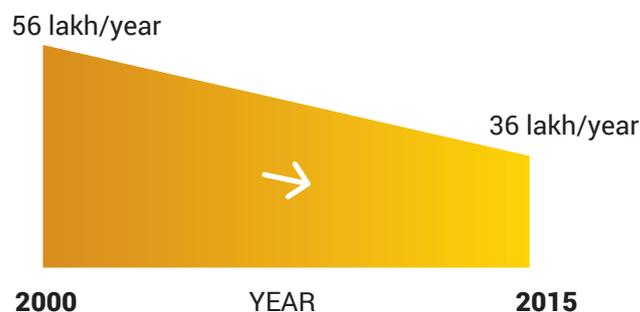
[1] TB-India 2017 (RNTCP-Annual Status Report)

Project brief - THALI

The United States Agency for International Development (USAID) awarded multiple Tuberculosis Health Action Learning Initiative (THALI) awards in January 2016 with the goal of improving 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) seeks to improve 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. THALI focuses on the objective of improved urban TB control in two cities – Bengaluru (Karnataka) and Hyderabad (Telangana), which since June, 2018, has expanded to encompass 15 districts in Karnataka, six in Telangana and three in Andhra Pradesh. KHPT implements THALI in Karnataka, while TB Alert India (TBAI) implements it 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 the two RNTCP districts of Bengaluru and one RNTCP district of Hyderabad where THALI currently operates.

Within 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 and conditions like diabetes and undernutrition, which enhance the onset of TB disease, and complicate, compromise and/or delay treatment outcomes;

- Persons prone to developing TB from working in overcrowded workplaces and exposed to indoor or outdoor 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

THALI Intervention Area

THALI Intervention Area
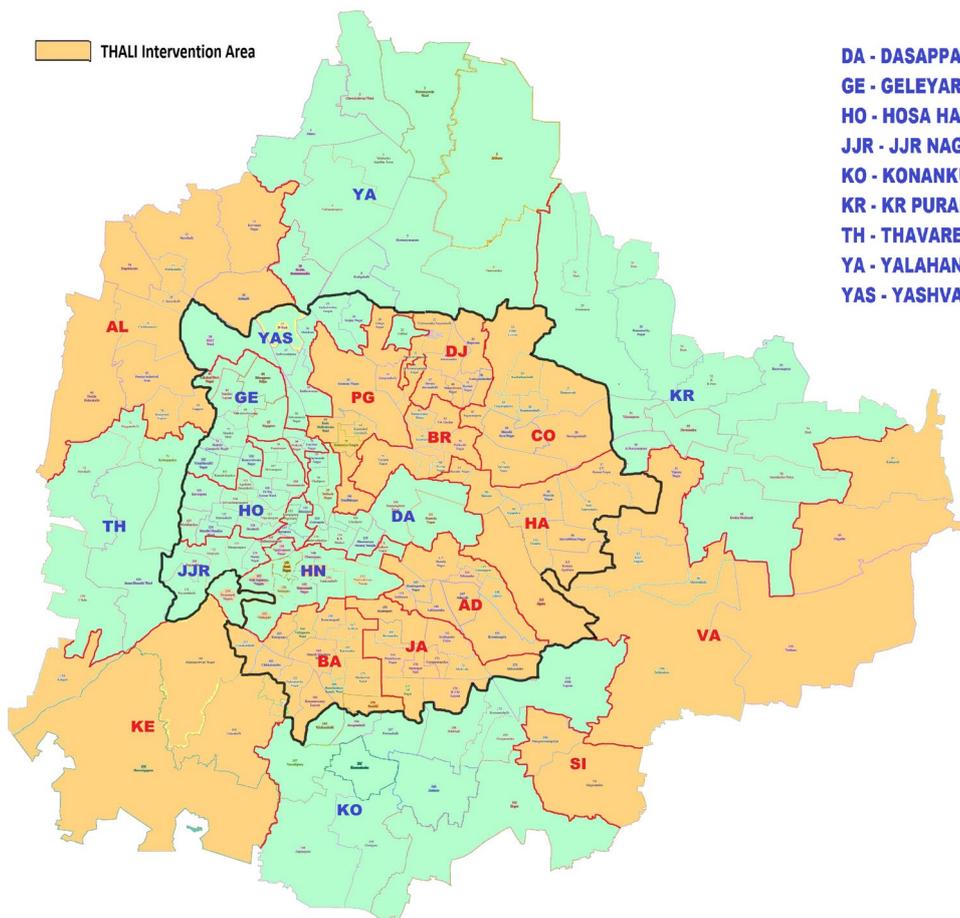
DA - DASAPPA	AD - ADUGODI
GE - GELEYARBAGALAGA	AL - ALBBIGERE
HO - HOSA HALLI	BA - BANASHANKARI
JJR - JJR NAGAR	BR - BROADWAY
KO - KONANKUNTE	CO - COX TOWN
KR - KR PURAM	DJ - DEVAR JEEVANHALLI
TH - THAVAREKARE	HA - HALSUR
YA - YALAHANKA	HN - HANUMANT NAGAR
YAS - YASHVANTPUR	JA - JAYANAGAR
	KE - KENGERI
	PG - PALACE GUTTAHALLI
	SI - SINGASANDRA
	VA - VARTHUR

Zone	TU Name
A	Abbigere
	DJ Halli
	PG Halli
B	Anekal
	Banashankari
	Jayanagar
	Kengeri
	Singasandra
C	Broadway
	Cox Town
	Halasur
	Varthur
	Adugodi

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

02

BASELINE SURVEY

Study Design

The baseline study among adults in the slums of Bengaluru Urban under the THALI project was envisaged to understand the knowledge aspects of TB among adults. The data derived from the study provides statistical evidence on key indicators, which will serve as a benchmark for periodical assessment and for developing community engagement 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, with the equivalent of 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 each household, an adult was interviewed for the knowledge survey, with his or her consent.

Sample

The sample frame for Bengaluru Urban district consisted of 637 slums. A total of 60 slums, which formed the PSU, were selected for the knowledge survey using the PPS method. Based on statistical relevance, the total sample size for the knowledge survey was fixed at 480 adults. In each PSU, it was proposed that eight households be selected from the house listing, using a systematic random sampling technique, and one adult from each household be interviewed for the knowledge survey.

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

Table 1: Sample coverage, knowledge survey

Result of interview	Percent	Number of Cases
Completed	95.4	458
Not at home	3.1	15
Refused	1.0	5
Other	0.5	2
Total	100.0	480

Survey tools

The tool broadly focused on the following aspects for analysis:

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, as well as in-house detailing on tools, was done during the orientation session of the staff in order to assess and ensure that the questions given in the tools would fetch the required information and that probing would help in obtaining the correct information from the adult person. 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 of households and selecting the adult CS perons for the health seeking survey. There was an emphasis on screening households at each PSU to identify households with chest symptomatic (CS) persons.

 The training was organized from 7-13 November, 2016, and 16 persons attended the training.

Data collection and analysis

Data collection was initiated on 15 November, 2016 and continued until 7 February, 2017. A team comprised of a research coordinator, field coordinator and nine field investigators carried out the task, and thereafter 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

Socio-economic and demographic profiles of households were collected for micro planning and for initiation of project activities among the neediest groups. (Table-2)

Nearly 58% of the household members were in the age-group of 18-49 years, 30% were below 18 years of age and 13% were above 50 years of age. The mean age of household members was 28 years. Nearly 51% of the household members were males and 49% were females.

A segregation of household members by religion indicated that 76% were Hindu, 17% were Muslim, and 7% were from other religions (mainly Christians). A caste-wise segregation of the respondents showed that 43% were from a Scheduled Caste, 3% were from a Scheduled Tribe and others accounted for 54%.

Data regarding household income showed that 50% of the households had an income that ranged between Rupees 5000 and Rupees 14999, whereas nearly 41% of the households had an income of over Rupees 15000. Nearly 5% of the households had an income of less than Rupees 5000. Nearly 5% of the respondents preferred not to mention their monthly household income.

Analysis of demographic, social and economic indicators shows that it would benefit the project to consider the age group of the populations it works with as the needs of the communities may differ based on their age and other determinants. Another important aspect is that nearly 43% of the slum population is constituted by children and the elderly. Nutrition support and Direct Benefit Transfer are some of the key benefits required for the patients in this category.

Table 2: Profile of households

Characteristics	Total
Age of the household members	
<18	29.8
18-49	57.6
50+	12.7
Mean age	28.2
Number of cases	2031
Sex of the household members	
Male	51.2
Female	48.8
Number of cases	2032
Total percent	100.0
Religion	
Hindu	75.7
Muslim	17.3
Others	7.0
Number of cases	458
Total percent	100.0
Caste/Tribe	
Schedule Caste	43.2
Schedule Tribe	2.9
Others	54.0
Number of cases	458
Total percent	100.0
Monthly household income	
< 5000	4.5
5000-14999	49.6
15000+	40.5
Not mentioned	5.4
Mean monthly household income	13887.9
Number of cases	458
Total percent	100

Household composition

Information about the composition of 458 households indicated that nearly 80% households were headed by a male member and the remaining 20% were headed by a female member. (Table-3)

The mean age of the head of the household was 45 years. Nearly 10% of the household heads were less than 30 years of age, and 57% of the household heads were in the age group of 30-49 years. The remaining 33% of the household heads were aged 50 years and above.

Data on the structure of households showed that nearly 74% of the households were comprised of nuclear families. The remaining 26% were non-nuclear or joint families.

The mean household size was 4.4 members per family. Nearly 72% of the households were comprised of four or more members in the family and the remaining 28% of the households had less than four members.

The data of household heads among 458 households reflects a ratio of 80:20 (Male: Female) approximately. Community-level activities such as formation of support groups or community volunteers would require that adequate representation of male and female members is ensured.

Table 3: Household composition

Characteristics	Total
Sex of the household head	
Male	80.2
Female	19.8
Age of the household head	
20-29	9.9
30-49	57.4
50+	32.7
Mean age	44.6
Household structure	
Nuclear	74.1
Non-nuclear	25.9
Number of household member	
1	1.6
2	9.9
3	16.1
4	32.9
5	21.6
6+	17.9
Mean number of household members	4.4
Total percent	100.0
Number of cases	458

Household facilities

Data on facilities available among 458 sampled households was collected. Nearly 55% of the households stayed in pucca houses, 36% of the households stayed in semi-pucca houses, and the remaining 9% stayed in kaccha houses made of mud, hay, a sheet etc. (Table-4)

Nearly 83% of the respondents reported that they were staying in accommodations with one or two rooms, and the remaining 17% said that they were staying in three or four roomed accommodations. 79% of the respondents said that they used one room for sleeping, whereas nearly 20% said that they used two rooms for sleeping. The remaining 1% of the respondents said that they use three or more rooms for sleeping.

The team observed or enquired if the houses had windows that could be opened, and ventilation facilities. About 47% and 22% of the households said that their houses had windows and proper ventilation, respectively. The remaining 53% and 78% of the houses did not have windows that could be opened, or ventilation facilities.

Nearly 56% of the respondents said that they owned the house they were living in. The remaining 44% reported that they were staying in a rented accommodation.

Data on entertainment and information sources shows that nearly 94% of the households owned a television and about 6% owned a radio. Specific to the availability of telephones and mobile phones. Nearly 4% and 97% of the households reported that they owned a telephone and a mobile phone, respectively.

Table 4: Household facilities

Characteristics	Percent
Type of house	
Kaccha	9.3
Semi-pucca	35.9
Pucca	54.8
Number of rooms	
1	31.4
2	51.4
3	13.9
4+	3.3
Number of rooms used for sleeping	
1	78.9
2	19.9
3+	1.2
Has BPL card	
Yes	57.2
No	41.6
Don't Know/Can't say	1.2
House has window that can be opened	
Yes	47.2
No	52.9
Has ventilation facility	
Yes	22.0
No	78.0
Ownership of present house	
Own house	55.6
Not own house	44.4
Own a radio	
Yes	5.8
No	94.2
Own a telephone	
Yes	3.6
No	96.4
Own a mobile	
Yes	97.2
No	2.8
Own a television	
Yes	94.0
No	6.0
Total	100.0
Number of cases	458

Profile of survey respondents

A profile of survey respondents showed that nearly 35% of the respondents were male and 65% were female. (Table-5)

A categorisation of the respondents by age showed that the mean age of males and females was 40 and 35 years, respectively. Nearly 62% of the respondents were below the age of 40, 31% of the respondents were in the age group of 40-59 years and the remaining 8% of the respondents were over 60 years old.

Of the total respondents, 73% were married at the time, 13% of them reported that their marriage had dissolved, and the remaining 13% of them said that they had never been married.

Literacy and education levels among the respondents revealed that a greater proportion of respondents had completed their middle school education. Nearly 53% of the respondents had completed middle school, another 23% were 'literate, middle incomplete', and the remaining 24% were illiterate.

The occupations of male and female respondents were analysed. Nearly 10% of the respondents were in business, another 10% were engaged in salaried jobs and 34% in other jobs. Of the total, 25% of the respondents were housewives, and the remaining 21% of the respondents were not working at the time.

The mean income of respondents was Rupees 4,557 per month. Nearly 46% of the respondents said that they were not earning, 10% of them reported an income less than Rupees 5000, 42% reported an income over Rupees 5000, and the remaining 2% of them did not disclose their income.

Table 5: Profile of survey respondents

Characteristics	Male	Female	Total
Sex			
Male			34.8
Female			65.2
Age			
< 40	49.2	68.5	61.8
40-59	39.7	25.8	30.6
60+	11.1	5.8	7.6
Mean age	40.1	34.9	36.7
Marital status			
Currently married	73.9	73.2	73.4
Marriage dissolved	5.7	17.3	13.3
Never married	20.4	9.5	13.3
Literacy and education			
Illiterate	21.2	25.5	24.0
Literate, middle incomplete	23.4	22.7	22.9
Middle completed	55.4	51.8	53.1
Occupation			
Business	21.0	3.7	9.7
Salaried job	15.9	6.5	9.8
Other job	53.7	24.1	34.4
Housewife	0.0	38.3	24.9
Not working	9.4	27.4	21.1
Personal monthly income			
No income	9.4	65.8	46.2
<5000	6.6	11.5	9.8
15000+	81.1	20.5	41.9
Not mentioned	2.3	2.1	2.2
Mean income	9513.2	1911.5	4557.1
Total percent	100	100	100
Number of cases	160	298	458

04

HEALTH-RELATED INFORMATION

Sources of information

This section describes the sources of getting health-related information for the households. Nearly 52% of respondents said that they obtained health-related information either through radio or television. The proportion of respondents who accessed health-related information varied from 25% from newspapers and magazines, 25% from friends and/or relatives, 21% from hospitals, and 16% from health workers. A small proportion of respondents accessed health-related information from other sources such as community meetings, outreach workers from NGOs, telephone helplines, web-based information, and posters, accounting for 3%, 2%, 3%, 5% and 8%, respectively. (Table-6)

There is a lot of scope to use various media to disseminate health-related information among the households at the community level. Correct and consistent information on TB and related subjects through outreach efforts from both the government and NGOs at the community level will help build awareness and promote health seeking behaviour.

Table 6: Source of health-related information

Source of information	Sex of the respondent		
	Male	Female	Total
Newspapers and magazines	34.4	20.5	25.3
Radio/TV	55.6	50.5	52.3
Billboards	3.8	2.5	3.0
Brochures, posters, other printed material	13.8	5.5	8.4
Health workers	15.3	16.3	15.9
NGO outreach workers	4.5	0.8	2.1
Community meetings	1.3	4.2	3.2
Video show in the community	0.0	0.3	0.2
Telephone helpline	4.0	2.1	2.8
Web-based information	3.3	6.0	5.1
Friends/relatives	27.0	23.5	24.7
Hospital	13.1	25.0	20.8
Other	5.4	3.6	4.2
Total Percent	100.0	100.0	100.0
Number of cases	160	298	458

Type of health facility

Nearly 46% of the respondents reported that the members of their household usually go to government health facilities (Government hospital/Municipal hospital/ Government dispensary) for treatment. The remaining 54% of the respondents said that they access private health facilities (hospitals/doctors/ clinics) for treatment. (Table-7)

The findings indicate that the number of persons accessing either private or public health care facilities was almost equal. This points to the need to strengthen both the public and the private health sector simultaneously, so that quality services can be made available at the health facility of the community members' choice.

Respondents gave reasons for not accessing treatment from a government health facility. Nearly 50% of the respondents said that the government health facility was located far away from them, 28% said that the waiting time was too long, and 26% said there was poor quality of care in government facilities. Other reasons given included inconvenient facility timings, and the frequent absence of health personnel, accounting for 20% and 14% of responses, respectively. A small number of respondents, nearly 7%, 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	46.1	41.7	43.2
Government dispensary	4.2	2.4	2.4
NGO/Trust hospital/clinic	1.1	2.0	1.7
Private hospital	40.0	43.7	42.4
Private doctor/clinic	8.0	9.9	9.2
Other private sector health facility	0.7	0.0	0.2
Other	0.0	0.3	0.2
Total percent	100.0	100.0	100.0
Number of cases	159	299	458

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

Reasons	Sex of the respondent		
	Male	Female	Total
Facility is far away	51.1	48.7	49.5
Facility timing not convenient	23.6	17.8	19.7
Health personnel often absent	18.9	11.1	13.6
Waiting time too long	29.6	26.4	27.5
Poor quality of care	25.2	25.8	25.6
No reason	2.7	9.1	7.1
Other	7.1	6.0	6.4
Number of cases	79	167	246

Health schemes/Health insurance

The team enquired about health schemes and/or health insurance availed by the members of the household. Nearly 81% of the respondents said that household members were not covered by any health schemes or health insurance. A little over 11% of the households were covered under Employees' State Insurance Scheme. Most of the other health schemes and/or health insurance run by the Central and State Governments were accessed by less than 3% of the households. (Table-9)

It is evident from the data that there is immense scope to link households with health schemes/health insurance of the Central and State Governments. Access to these health schemes/insurance for funds to purchase drugs and meet other treatment expenses.

Table 9: Type of health scheme/ health insurance

Name of health scheme/insurance	Sex of the respondent		
	Male	Female	Total
Employees' State Insurance Scheme (ESI)	12.9	10.7	11.4
Central Government Health Scheme (CGHS)	1.8	2.4	2.2
State Health Insurance Scheme	2.6	2.0	2.2
Rashtriya Swasthya Bima Yojana(RSBY)	2.5	2.1	2.2
Community Health Insurance Program	0.6	0.0	0.2
Other Health Insurance through Employer	1.3	0.0	0.4
Medical Reimbursement from Employer	1.3	0.5	0.8
Other Privately Purchased Commercial Health Insurance	0.5	1.6	1.2
Other	1.3	0.3	0.6
No health scheme/ insurance coverage	78.2	83.0	81.3
Have more than one insurance	2.5	2.3	2.3
Total percent	100.0	100.0	100.0
Number of cases	160	298	458

Personal habits

Data on the personal habits of the respondents were collected. Smoking cigarettes and/or *beedis*, and consuming alcohol among the female respondents was found to be very low i.e., 1% and nil, respectively. Among male respondents, nearly 39% were either current or past smokers, and the remaining 61% of them reportedly did not have a smoking habit. Nearly 41% of the male respondents said that they consumed alcohol, out of them 11% consumed alcohol daily. The remaining 59% of the male respondents said that they never drink. (Table-10)

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

Personal habits	Sex of the respondent		
	Male	Female	Total
Smoke cigarettes/beedis			
Current smoker	31.8	1.0	11.8
Past smoker	7.6	1.0	3.3
Never smoked	60.6	97.9	84.9
Drink alcohol			
Almost every day	11.4	0.0	4.0
About once a week	19.7	1.6	7.9
Less than once a week	9.7	0.9	4.0
Never	59.2	97.5	84.2
Total percent	100.0	100.0	100.0
Number of cases	160	298	458

Respondents with disease patterns

Respondents were asked if they had suffered or were suffering from a pre-defined set of diseases. Nearly 10% of the respondents said that they had diabetes, about 10% said that they had hypertension, and about 2% said that they had asthma. At least one disease condition was reported by 16% of the respondents and 6% of them reported more than one disease condition. (Table-11)

Disease patterns according to age were also analysed. Among the age group of 40-59 years, nearly 22% of the respondents had diabetes, about 14% of them had hypertension and 2% had asthma. Among respondents over the age of 60 years, nearly 43% had hypertension, about 23% had diabetes and 6% had asthma. (Table-12)

Analysis of the disease pattern reflects that there is an increase in disease patterns according to age. At least one disease condition and more than one disease condition was reported more among respondents above 40 years of age.

Table 11: Respondents who had ever suffered selected diseases

Name of disease	Sex of the respondent		
	Male	Female	Total
Diabetes	10.7	10.0	10.2
Asthma/Chronic respiratory disease	1.2	1.7	1.5
Cancer	0.7	0.3	0.4
Blood pressure/Hypertension	10.3	9.6	9.8
HIV/AIDS	0.7	0.3	0.4
At least one disease	17.8	15.4	16.3
More than one disease	5.0	5.9	5.5
Number of cases	160	298	458

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

Name of disease	Age of the respondent		
	<40	**40-50**	**60+**
Diabetes	3.1	21.6	22.6
Asthma/Chronic respiratory disease	0.7	2.1	6.1
Cancer	0.0	1.4	0.0
Blood pressure/Hypertension	3.6	14.2	43.1
HIV/AIDS	0.3	0.8	0.0
At least one disease	6.6	27.2	50.2
More than one disease	1.0	11.4	18.5
Number of cases	283	140	35

05

KNOWLEDGE ABOUT KEY ASPECTS OF TB

This section provides the respondents' views on the 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 and cost of treatment, among other questions.

The respondents were asked about which disease condition a person was likely to have, if the person was suffering from a persistent cough for two weeks or more. Nearly 40% of the respondents said TB, 20% of them said seasonal cold, and 15% and 9% mentioned throat infection and asthma, respectively. About 13% of the respondents did not know or couldn't say. (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	23.3	10.3	14.7
Seasonal Cold	21.2	18.7	19.6
Viral Fever	9.3	9.7	9.5
Tuberculosis	31.8	44.7	40.2
Pleurisy	1.3	1.5	1.4
Chest Congestion	2.5	3.4	3.1
Asthma/COPD	8.5	9.7	9.3
Others	7.2	5.2	5.9
Don't know/Can't say	13.9	12.6	13.0
Total Percent	100.0	100.0	100.0
Number of cases	160	298	458

Knew or heard about TB and source of information

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

Respondents below the age of 60 years who were currently married and educated up to middle school had a considerably higher level of knowledge of TB.

Although not found significant, respondents who were engaged in business and salaried jobs, were not Muslims, who were not from Scheduled Castes or Scheduled Tribes, and those whose personal monthly income was more than Rupees 5,000 were more likely to know of and have heard about TB.

When respondents were grouped geographically according to program operations, data showed that the proportion of respondents who knew or had heard about TB was highest in Zone B (88%) and lowest in Zone C (77%).

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

Characteristics	Percent	No. of cases	p-value
Sex			
Male	77.7	160	
Female	79.8	298	0.634
Age			
< 40	79.7	283	
40-59	80.9	140	
60+	66.5	35	0.191
Marital status			
Currently married	80.9	336	
Marriage dissolved	72.2	61	
Never married	76.1	61	0.242
Literacy and education			
Illiterate	62.2	110	
Literate, middle incomplete	77.2	105	
Middle completed	87.6	243	<0.001
Occupation			
Business	86.0	45	
Salaried job	84.4	45	
Other job	74.0	158	
Housewife	79.3	114	
Not working	81.6	97	0.394
Religion			
Hindu	79.6	347	
Muslim	76.5	76.5	
Others	79.8	32	0.816
Caste/Tribe			
Scheduled Caste/Tribe	75.9	211	
Others	81.8	247	0.120
Personal monthly income			
< 5000	77.6	266	
5000+	81.2	192	0.333
Monthly household income			
< 15000	76.4	273	
15000+	83.1	185	0.079
Slum areas according to program zones			
Zone A	79.9	71	
Zone B	88.0	33	
Zone C	77.2	106	
Non-THALI areas	78.5	248	0.598
Total	79.1	458	

Respondents who knew about TB were asked about their source of information on TB. Nearly 45% of the respondents said that they came to know about TB through word of mouth from friends and/or relatives, 34% said that they knew about TB because their friends and/or relatives had TB. About 30%, 17% and 6% of the respondents said that they had found out about TB through electronic media, print media and Information, Education and Communication (IEC) materials, respectively. (Table-15)

Only 9% of respondents reportedly received information about TB through government frontline workers (FLWs), namely the DOTS provider, health worker and the Anganwadi Worker.

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	28.0	31.2	30.1
Newspaper/ Magazine	21.5	14.2	16.7
Posters/ Banners/ Hoardings/Campaigns	7.0	4.8	5.5
Word of Mouth from Friends/ Relatives	38.5	47.9	44.6
TB Diseases among Friends/ Relatives	35.6	33.6	34.3
DOTS Provider/ Health Worker	4.5	3.7	4.0
Anganwadi Worker	3.5	5.7	5.0
Community Meetings	5.1	2.0	3.1
Workplace	7.2	2.0	3.8
Schools/ Teachers	1.6	2.4	2.1
Telephone Helpline	0.0	0.4	0.3
Respondent Had TB	1.5	0.5	0.8
Others	12.4	15.5	14.4
Number of cases	124	238	362

Mode of transmission of TB

Respondents were asked about the mode of transmission of TB. Nearly 62% of the respondents reported that TB spreads through air when a person with TB coughs and/or sneezes. About 33% of the respondents said that they did not know or couldn't say what the mode of transmission of TB was. A few other modes of transmission mentioned by the respondents were found to be irrelevant or insignificant. (Table-16)

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

Mode of TB transmission	Sex of the respondent		
	Male	Female	Total
Through air when a person with TB coughs/sneezes	60.7	62.6	62.0
Sharing Utensils	6.7	9.5	8.5
Touching a person with TB	5.8	4.6	5.0
Food	13.5	23.2	19.8
Sexual Contact	3.2	1.1	1.8
Mosquito Bites	1.2	3.4	2.7
Stepping on Sputum	7.6	8.5	8.2
Other	2.5	2.1	2.2
Don't know/Can't say	35.0	31.4	32.6
Total Percent	100.0	100.0	100.0
Number of cases	160	298	458

Respondents were asked about the part of the body most likely to be affected by TB. Nearly 36% of the respondents said the lung was the most likely to be affected. About 52% of the respondents said that they did not know or could not say.   There were other responses which were not found to be significant. (Table-17)

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	41.3	33.8	36.4
Bones	0.7	3.1	2.2
Lymph nodes	0	0.4	0.3
Skin	3.2	1.4	2
Abdomen	0.5	1	0.8
Brain	0	1.2	0.8
Any part of the body	6.4	3	4.2
Other	1.9	1.9	1.9
Don't know/Can't say	46.1	54.4	51.5
Number of cases	160	298	458

Respondents were asked about the most common symptom of lung TB. Nearly 54% of the respondents said that cough is the most common symptom of lung TB, another 12% and 3% of the respondents said that weight loss and weakness, respectively, were the most common symptoms. About 27% of the respondents did not know the symptoms of lung TB. (Table-18)

Overall, a little over half of the respondents knew about the most common symptom of lung TB. The remaining respondents did not know or mention the common symptom. It can be inferred that awareness on the basics of TB is required for the general population.

Table 18: Most common symptom of lung TB

Most common symptom of lung TB	Sex of the respondent		
	Male	Female	Total
Cough	48.7	57.1	54.2
Fever	2.4	2.1	2.2
Weight loss	13.2	0.6	0.6
Weakness	5.4	11.7	12.2
Chest pain	0.0	1.7	3.0
Others	0.0	0.3	0.2
Don't know/Can't say	29.6	26.2	27.3
Number of cases	160	298	458

Confirmatory test for TB

The respondents' knowledge about the confirmatory test for TB was analysed. Nearly 63% of the respondents said the sputum test was confirmatory, while 51% and 64% of the respondents mentioned X-rays and blood tests, respectively. Other tests, including the Mantoux test and a tissue biopsy, were mentioned by 11% and 8% of the respondents, respectively. (Table-19)

Table 19: Specific confirmatory test for TB

Test reported			
	Male	Female	Total
X-ray of the chest	55.9	47.9	50.7
Sputum test	63.4	63.0	63.1
Blood test	61.5	65.3	64.0
Mantoux tuberculin/ skin test	8.8	12.6	11.3
Tissue biopsy	9.5	7.8	8.4
Other test	5.6	8.1	7.2
Number of cases	160	298	458

TB testing centre

Respondents mentioned a variety of centres where they thought TB testing was available. The classification of testing centres into government and private sector centres resulted in the following inferences.

Majority of the respondents reported that testing could be done at a municipal corporation hospital (53%) and a government TB hospital (29%). A small proportion of respondents said that test could be done at other government hospitals (1%) and Designated Microscopy Centres (DMC) (<1%). About 17% and 3% of the respondents said that testing could be done at a private hospital and a private clinic, respectively. About 26% of the respondents didn't know or couldn't say where TB testing was carried out. (Table-20)

Findings show that the DMC is lesser known among the respondents, even as it is the most appropriate facility for TB testing as promoted by the RNTCP.

Table 20: Place where adults can be tested for TB

Place for TB testing	Sex of the respondent		
	Male	Female	Total
Municipal Corporation Hospital	52.7	53.8	53.4
Government TB Hospital	33.4	27.2	29.4
Medical College	1.3	0.2	0.6
Other Government Hospital	0.7	1.7	1.4
Designated Microscopy Centre	0.0	1.2	0.8
Private Hospital	13.1	19.0	17.0
Private Clinic	2.9	2.5	2.6
Any private lab	2.9	1.5	2.0
Others	0.7	0.8	0.8
Don't know/Can't say	24.3	26.2	25.5
Number of cases	160	298	458

TB treatment – place, cost, duration and facts

Respondents were asked where they thought treatment for TB is available. Nearly 64% and 18% of the respondents reported that the municipal hospital and government dispensary, respectively, were the places for TB treatment. About 20% and 1% of the respondents said that private hospitals and private clinics, respectively, offered treatment for TB. (Table-21)

About 28% of the respondents said that they did not know or couldn't say where TB treatment is available. Some respondents mentioned other government and private facilities, but they were insignificant in number.

Table 21: Place where treatment for TB is available

Place of treatment for TB	Sex of the respondent		
	Male	Female	Total
Municipal Hospital	64.2	63.4	63.7
Government Dispensary	20.5	16.9	18.2
UHC/UHP/UFWC	0.0	0.3	0.2
Anganwadi/ASHA/ANM	0.7	0.3	0.4
DOTS Centre	0.4	0.3	0.4
Government Mobile Clinic	0.5	2.1	1.5
ESI Hospital	1.8	0.7	1.1
Other Public Sector Health Facility	0.5	0.6	0.6
NGO or Trust Hospital/Clinic	0.6	1.6	1.2
Private Hospital	15.7	22.6	20.2
Private Doctor/Clinic	1.4	1.4	1.4
Other Private Sector Health Facility	0.7	0.4	0.5
Medical College	0.6	0.0	0.2
Pharmacy/Drug Store	0.0	0.4	0.2
Home Treatment	0.7	0.7	0.7
Don't know/Can't say	28.0	27.9	27.9
Number of cases	160	298	458

Treatment cost and duration are other influencing factors which have a direct impact on drug adherence and loss to follow-up. Nearly 68% of the respondents did not know or could not say what the cost of treatment was. About 17% of the respondents said that no cost would be incurred on treatment and 10% of the respondents said that treatment cost was Rupees 10000 or more. (Table-22)

The duration of treatment for TB is critical for patients to be fully cured, and to prevent a relapse. Nearly 42% of the respondents did not know or could not say what the duration of treatment was. Around 29% and 11% of the respondents said the treatment duration was six months and more than six months, respectively, and the remaining 18% said that the treatment period was less than six months.

Table 22: Cost and duration of treatment for TB

Cost/duration	Sex of the respondent		
	Male	Female	Total
Cost of treatment (in rupees)			
No cost	18.8	15.3	16.5
1 - 9999	7.6	4.9	5.8
10000+	9.7	9.9	9.8
Don't know/Can't say	63.9	70.0	67.8
Duration of treatment			
<6 months	16.9	18.2	17.7
6 months	29.2	28.6	28.8
6+ months	12.0	11.1	11.4
Don't know/Can't say	41.9	42.1	42.0
Number of cases	160	298	458

Findings show that knowledge with respect to TB treatment services, cost and duration of treatment is minimal among the respondents. This needs to be addressed through awareness programs as these factors directly influence treatment access, drug adherence and loss to follow-up.

Awareness among the respondents was assessed on the statements "TB is fully curable" and "All TB patients need admission in hospital for treatment."

Nearly 69% of the respondents 'strongly agreed' or 'agreed' with the statement that TB is fully curable. The remaining 25% of the respondents did not know or couldn't say if TB is fully curable. About 3% of the respondents disagreed with the statement. (Table-23)

About 71% of respondents 'strongly agreed' or 'agreed' with the statement that all TB patients need admission in hospital for treatment. About 25% of the respondents did not know or could not say if the statement was true or false. About 2% of the respondents strongly disagreed or 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	50.7	54.5	53.2
Agree	15.2	15.9	15.7
Neither agree nor disagree	4.5	2.3	3.1
Disagree	5.9	1.6	3.1
Don't know/Can't say	23.6	25.6	24.9
All TB patients need admission in hospital for treatment			
Strongly agree	50.9	56.4	54.5
Agree	18.5	14.9	16.2
Neither agree nor disagree	2.7	2.6	2.6
Disagree	2.9	0.9	1.6
Strongly disagree	0.0	0.3	0.2
Don't know/Can't say	25.0	24.9	24.9
Number of cases	160	298	458

Respondents were asked what could happen to a TB patient, if he or she did not complete the full course of treatment.

Nearly 67% of the respondents said that an incomplete course of treatment would lead to death, 48% of them said that it could lead to more illness, and about 21% said that the disease would not be cured. A relatively small number of respondents i.e., 8% each, said that an incomplete course of treatment would lead to the spread of TB and hospitalization, respectively. (Table-24)

Most of the respondents were clear about the consequences of non-adherence to the full course treatment. However, very few respondents reported that it leads to spread of TB to others. There is a need to further strengthen the levels of awareness on TB, specifically with regard to treatment adherence.

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

Statement	Sex of the respondent		
	Male	Female	Total
Spread of TB to others	8.0	7.8	7.9
Disease will not be cured	17.6	22.8	21.0
Medicines will stop working	2.3	0.0	0.8
More illness	53.4	45.6	48.3
Death	70.4	64.9	66.8
Hospitalisation	11.9	6.0	8.0
Cost of treatment will increase	0.5	1.3	1.0
Duration of treatment will increase	0.0	0.5	0.3
Others	0.0	0.4	0.3
Don't know/Can't say	0.9	3.0	2.3
Number of cases	111	216	327

Questions regarding disclosure were asked to respondents who knew about or had heard about TB were asked questions regarding disclosure of one's TB status.

Nearly 75% of the respondents said that a TB patient should disclose his or her status to the spouse, 51% of them said that a TB patient should disclose his or her status to a doctor, and about 49% and 27% of them said that a TB patient should disclose his or her status to parents and children, respectively. Only 2% of the respondents did not know or could not 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	57.6	47.8	51.2
Spouse - wife/ husband	76.4	74.5	75.2
Children - son/ daughter	30.0	25.8	27.2
Parents - mother/ father	41.2	52.8	48.8
Siblings - brother/ sister	3.7	3.9	3.8
Aunt/ uncle	3.4	1.6	2.2
Other relatives	2.4	4.9	4.0
Friends	13.6	7.8	9.8
School mates	0.6	0.4	0.5
Boss	0.8	0.0	0.3
Neighbours	0.8	0.8	0.8
Nobody	0.0	0.5	0.3
Don't Know/Can't Say	1.6	1.6	1.6
Number of cases	124	238	362

Respondents who had said that a TB patient should disclose his or her status were asked the reasons for disclosure.

Nearly 48% of the respondents said that the TB patient should disclose his or her status for adequate family support, 39% each reported that the TB patient should do so for treatment support and quick treatment, respectively. About 28% and 15% of the respondents mentioned emotional and financial support, respectively, as reasons for disclosure. Only 19% of respondents said that the TB patient should disclose his or her status to prevent the spread of TB. (Table-26)

It may be inferred that there is a need to further sensitize the community about one of the most important reasons for disclosure 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	48.6	33.3	38.6
Prevent spread	22.6	17.4	19.2
Emotional support	21.7	30.8	27.7
Family support	47.0	48.0	47.7
Treatment support	36.2	40.7	39.2
Financial support	14.5	15.7	15.3
Other	0.0	1.4	0.9
Number of cases	122	233	355

Respondents who knew or had heard about TB were also asked questions related to the non-disclosure of TB status. Nearly 43% of the respondents said that a TB patient should not disclose his or her status to neighbours, 26% of them said that relatives should not be told, and about 22% said TB status should not be disclosed to friends. (Table-27)

More female respondents (45%) than male respondents (39%) said that neighbours should not be informed about TB status.

Respondents who said that a TB patient should not disclose his or her status were asked the reasons for non-disclosure. Nearly 58% of the respondents said that the family name would be spoiled, 33% of them said that the people in the community would avoid the TB patient, and about 22% of them said that the people in the community would try to drive out the TB patient. The loss of employment was given as a reason for non-disclosure by nearly 10% of the respondents. (Table-28)

Respondents were asked the ways to prevent TB within the family or the community. Nearly 49% of the respondents mentioned covering the mouth and nose while coughing. Another 19%, 16% and 11% said that wearing a mask, good ventilation and prompt diagnosis and treatment, respectively, would prevent TB from spreading. About 32% of the respondents did not know or couldn't say how to prevent the spread of TB.

Awareness is required among the community on ways to prevent the spread of TB as 32% of the respondents do not know about prevention.

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

Should not disclose to	Sex of the respondent		
	Male	Female	Total
Doctor	0.8	0.0	0.3
Spouse - wife/ husband	7.7	2.5	4.3
Children - son/ daughter	5.4	4.1	4.5
Parents - mother/ father	1.5	1.3	1.4
Siblings - brother/ sister	0.8	1.3	1.1
Aunt/ uncle	8.4	1.9	4.2
Other relatives	27.7	24.5	25.6
Friends	23.9	21.6	22.4
School mates	9.8	9.5	9.6
Co-workers	12.1	9.4	10.3
Boss	18.1	12.8	14.6
Neighbours	38.8	44.9	42.8
School authorities	0.9	0.0	0.3
Anybody	2.6	4.4	3.8
Other	1.9	1.7	1.7
Don't know/can't say	10.6	12.9	12.1
Number of cases	124	237	361

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

Reasons for non-disclosure	Sex of the respondent		
	Male	Female	Total
Our family name will be spoiled	64.9	54.4	58.1
People in the community will avoid him/her	33.4	32.2	32.6
People in the community will try to drive him/her out	20.6	22.5	21.8
Loss of job	17.6	6.5	10.4
Other	13.5	16.5	15.4
Don't know/can't say	2.9	2.7	2.8
Number of cases	110	217	317

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	49.1	49.5	49.4
Wearing a mask	23.3	16.6	18.9
Good ventilation	11.8	17.6	15.6
Prompt diagnosis and treatment	13.6	9.9	11.2
Vulnerable persons like children to take medicines to prevent TB	3.9	2.5	3.0
Good nutrition	12.6	10.2	11.0
Other	4.6	7.6	6.6
Don't know/can't say	34.8	31.2	32.4
Number of cases	160	298	458

Comprehensive knowledge

We estimated a composite index on knowledge about TB based on four indicators. The components of comprehensive knowledge included the facts that 1) TB spreads through air when a person with TB coughs or sneezes, 2) cough is a common symptom of lung TB, 3) a sputum test is the confirmatory test for TB, and 4) that TB is fully curable. Although about 80% of the respondents were identified to have heard of or known about TB, only 35% of the respondents were found to have comprehensive knowledge of TB. Among the components of comprehensive knowledge, the fact that that TB is fully curable was mentioned by the largest number of respondents (68%). The fact that cough is the most common symptom of lung TB was reported by the least number of respondents (54%).

Figure 1: Percentage of respondents with comprehensive knowledge of TB

Comprehensive Knowledge: 35
Sputum test is confirmatory test: 63
TB is fully curable: 68
Cough is the most common symptom: 54
TB spreads through air: 62
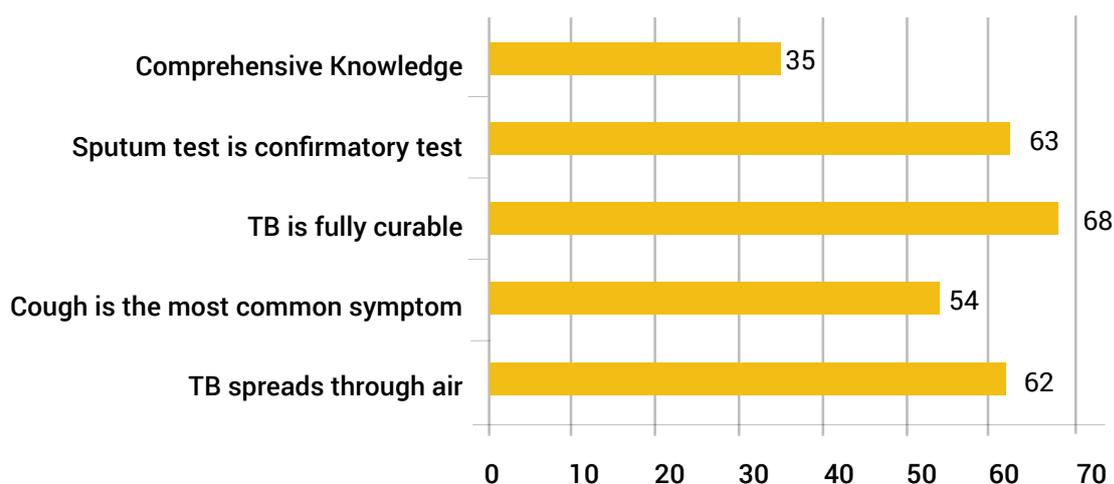
The distribution of respondents by comprehensive knowledge according to selected socio-demographic characteristics is given in Table 30.

Table 30: Percentage distribution of respondents who had comprehensive knowledge of TB

Characteristics	Percent	Number of cases	p-value
Sex of the respondent			
Male	30.9	160	
Female	37.2	298	0.168
Age			
< 40	36.5	283	
40-59	33.3	140	
60+	30.1	35	0.669
Marital status			
Currently married	34.1	336	
Marriage dissolved	36.0	61	
Never married	39.2	61	0.696
Literacy and education			
Illiterate	18.2	110	
Literate, middle incomplete	31.6	105	
Middle completed	44.1	243	<0.001
Occupation			
Business	26.1	45	
Salaried job	55.5	45	
Other job	29.7	158	
Housewife	41.8	114	
Not working	30.4	97	0.020
Religion			
Hindu	34.1	347	
Muslim	33.1	79	
Others	49.9	32	0.214
Caste/Tribe			
Scheduled Caste/Tribe	33.9	211	
Others	36.0	247	0.730
Personal monthly income			
< 5000	34.2	266	
5000+	36.1	192	0.689
Household monthly income			
< 15000	32.3	273	
15000+	39.0	185	0.172
Slum areas according to program zones			
Zone A	37.3	71	
Zone B	51.1	33	
Zone C	36.0	106	
Non-THALI areas	31.9	248	0.238
Total	35.0	458	

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

Comprehensive knowledge was found to be higher among females than males, but the difference was significant only at a p-value of below 20% level. Comprehensive knowledge was found to be higher among respondents below 40 years of age (37%), who had never married (39%), had been educated until middle school or to a higher level (44%), were in a salaried job (in the private or government sector) (56%), practiced religions other than Hinduism and Islam (50%), who did not belong to Scheduled Castes or Tribes (36%), had a personal monthly income of Rupees 5000 or more (36%), and whose monthly household income was Rupees 15000 or more (39%). However, the difference in comprehensive knowledge was found to be significant at below 5% level according to education and occupation of the respondent. Slum areas classified according to program zones indicated that among the THALI project areas, Zone B had the highest comprehensive knowledge (51%) and Zone C had the lowest comprehensive knowledge (36%).

We also conducted separate multivariate logistic regression models to identify the socio-demographic factors which influenced knowledge of TB, as well as comprehensive knowledge of TB. The multivariate logistic model included only the variables that have been identified to be significant at below 20% level in the bivariate analysis.

The results of the multivariate logistic regression for the knowledge of TB is given in Table 31. Four variables, including the age of the respondent, literacy and education, caste or tribe and monthly household income, were found to be associated with knowledge of TB at below 20% level in the bivariate analysis. Literacy and education of the respondents were found to have a significant influence on the knowledge of TB when other variables were accounted for. Respondents who had completed middle school or higher were four times more likely to know about TB than illiterate respondents. Although respondents who did not belong to Scheduled Castes or Tribes were identified to have higher knowledge than Scheduled Castes, the effect was not significant when controlling for other variables. Similarly, respondents whose monthly household income was Rupees 15000 or more were found to have more knowledge about TB, but this was not significant when other variables were accounted for.

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

Characteristics	Odds ratio	CI [95%]	p-value
Age			
< 40 (Reference)	1.00		
40-59	1.63	[0.86-3.06]	0.131
60+	0.75	[0.32-1.72]	0.493
Literacy and education			
Illiterate (Reference)	1.00		
Literate, middle incomplete	2.06	[1.10-3.81]	0.023
Middle completed	4.53	[2.44-8.39]	<0.001
Caste/Tribe			
Scheduled Caste (Reference)	1.00		
Scheduled Tribe	0.51	[0.13-1.99]	0.328
Others	1.22	[0.76-1.96]	0.397
Monthly household income			
< 15000 (Reference)	1,00		
15000+	1.29	[0.78-2.13]	0.562

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

The sex of the respondent, literacy and education levels, occupation and monthly household income were found to have a significant association with comprehensive knowledge at below 20% level in the bivariate analysis, and were included in the multivariate logistic regression model. The result indicated that female respondents were significantly more likely to have comprehensive knowledge of TB than male respondents. Literate and educated respondents showed a highly significant likelihood of having comprehensive knowledge.

For example, respondents who had completed middle school or a higher level of education were 3.5 times more likely to have comprehensive knowledge of TB than illiterate respondents. Respondents engaged in a salaried job (either a private or government job) had a significantly higher level of comprehensive knowledge than those engaged in business. Respondents residing in households with a monthly income of Rupees 15000 or more were likely to have comprehensive knowledge of TB, but the effect was not significant.

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

Characteristics	Odds ratio	CI [95%]	p-value
Sex of the respondent			
Male (Reference)	1.00		
Female	1.68	[1.03-2.73]	0.039
Literacy and education			
Illiterate (Reference)	1.00		
Literate, middle incomplete	2.24	[1.12-4.46]	0.023
Middle completed	3.53	[1.77-7.07]	0.001
Occupation			
Business (Reference)	1.00		
Salaried job	3.23	[1.13-9.12]	0.029
Other job	1.38	[0.56-3.38]	0.476
Not working	1.23	[0.51-2.97]	0.640
Monthly household income			
< 15000 (Reference)	1.00		
15000+	1.34	[0.84-2.14]	0.212

Key Findings and Scope

Sl. No.	Findings	Scope
1	The main sources of information on TB are friends and relatives, especially if there has been an experience of TB in the family. However, health-related information is accessed through radio and television as well.	It is important to form support groups as a means of disseminating knowledge to caregivers, and increase treatment retention amongst TB patients. While the preferred methods for accessing information are TV and radio, most people have TVs and mobile phones. There is scope for programs to support the government in designing TV and mobile-related messaging on TB.
2	Government and private health facilities are equally accessed by the households.	There is scope to strengthen public and private health facilities, as these facilities are accessed in almost equal measure by the households in urban slums. This will also ensure that information about TB and TB treatment is made available at the preferred facility.
3	Government health facilities were not used by nearly half of the respondents due to the frequent absence of staff, long waiting times and issues with quality of care.	There is scope to assist government health facilities in improving quality standards, thereby improving case reporting and care and support services to TB patients.
4	Most households are not covered under the government health scheme or other health insurance schemes.	Patients should be linked with government health schemes or other health insurance schemes in order to ensure access to medication and free treatment. Connecting the urban poor with medical insurance will address the fund crunch faced by the poor when seeking treatment.
5	Nearly half of the male respondents said they consumed alcohol at least once a week.	Alcohol consumption can adversely affect adherence to TB treatment. It is essential to devise a strategy to work among specific groups which are prone to alcoholism.
6	Knowledge about TB was found to be higher among household respondents within 60 years of age and educated up to middle school and higher levels of education.	At the community level, individuals with a higher knowledge of TB may be involved as patient advocates, and as members in patient support groups.
7	Respondents rarely got information about TB through government FLWs.	It is essential to involve government FLWs while conducting capacity-building and outreach sensitization sessions. This will strengthen their capacity to disseminate information on TB and refer patients at the grass-root level.

Sl. No.	Findings	Scope
8	About two-fifths of the respondents were not familiar with the mode of transmission of TB from one person to another.	It is important to conduct awareness-building activities through FLWs at the urban slums. Information on basics of TB such as transmission of TB, symptoms, confirmatory tests, testing centres, treatment, myths and misconceptions, treatment adherence, disclosure of TB, and prevention are key to awareness- building.
9	More than half the respondents were not familiar with the effect of TB on parts of human body.	
10	Nearly half the respondents did not know about correct symptoms of lung TB, or mentioned incorrect symptoms.	The use of Information, Communication and Technology (ICT) is recommended to disseminate key messages on TB.
11	Around two-fifths of the respondents were not sure about the specific test done for the confirmation of TB.	Case studies on TB treatment should be shared for replication of successful results and learning in case of adverse outcomes.
12	About one-fourth of the respondents did not know about TB testing centres. DMCs are not well-known among the respondents.	
13	Some respondents do not know where to get treatment for TB.	
14	About two-fifths of 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-third of the respondents do not know how to prevent TB.	
17	Nearly two-thirds of the respondents do not have comprehensive knowledge about TB.	

Baseline Status – Key Indicators

Sl. No.	Indicator	%
Awareness about TB		
1	% of adults who knew or had heard about TB	79
2	% of adults who knew about the mode of transmission of TB	62
3	% of adults who knew about the most common symptom of lung TB	54
4	% of adults who knew that the sputum test is the confirmatory test for TB	63
5	% of adults who knew about TB testing centers (MH, TB-H,GH & DMC)	72
6	% of adults who knew about TB treatment - Hospital (Government Hospital)	71
7	% of adults who knew that TB treatment is free of cost	17
8	% of adults who knew that TB treatment lasts for six months	29
9	% of adults who knew that TB is fully curable	69
10	% of adults who said that TB status should be disclosed to spouse (among those who knew or had heard of TB)	75
11	% of adults who knew that TB patients should disclose their status to prevent the diseases from spreading (among those who knew or had heard of TB)	19
12	% of adults who knew about the prevention of TB by covering the mouth and nose while coughing	49
13	% of adults who had comprehensive knowledge of TB	35