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Original Research Article

Knowledge, attitude and practices regarding pulmonary tuberculosis in a rural area of Tamil Nadu, India: a cross sectional study

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ABSTRACT

Background: Tuberculosis is still a major public health problem in India. Lack of knowledge about the cause, risk factors, treatment and prevention of pulmonary TB is a major challenge to be addressed to reduce disease transmission. This study was planned with the objective of determining the Knowledge, Attitude and Practices regarding pulmonary tuberculosis in a rural population of Kancheepuram district, Tamilnadu, India.
Methods: This community based cross sectional study was carried out between January and March 2018. Sample size of 400 was calculated by using formula $4pq/d^2$ and respondents were selected from sampled households using systematic random sampling. Data were collected using a pre-tested, structured questionnaire, which were analyzed using SPSS version 16.0 and presented using descriptive and analytical statistics.
Results: Among 400 participants studied, only 45.5% had adequate knowledge on PTB, 14.7% had positive attitude and 26.5% had good practices towards PTB. About 91.5% had heard about TB and 79% knew that TB could be transmitted from a patient to others. The cause for TB was correctly mentioned by only 19.5% of the subjects. About 35% knew that transmission of TB is preventable. Positive attitude had a statistically significant association with higher socioeconomic class and with adequate knowledge. Good practices on TB were more noted among participants with adequate knowledge and with age ≤45 years.
Conclusions: Study respondents had basic awareness about pulmonary TB but knowledge on cause and prevention was inadequate. Their attitude and practices towards TB also need to be improved. Health education activities need to be intensified for the rural population to bring about significant change in their level of awareness on TB.

Keywords: KAP, TB, Awareness, Villagers

INTRODUCTION

Tuberculosis (TB) is an infectious disease caused by *Mycobacterium tuberculosis* and is one of the major causes of morbidity and mortality worldwide. Pulmonary tuberculosis (PTB) is the most common form of presentation but TB can also affect other sites and organs like lymph nodes, abdomen and meninges etc.[1] Some of the predisposing factors known to be associated with the TB disease are malnutrition, lack of awareness about TB, co-morbid illnesses like diabetes mellitus, HIV infection, increased susceptibility at extremes of age, smoking, overcrowding and poverty.[2-4] Apart from these, lack of financial sources, poor accessibility to health facilities and lack of knowledge about the symptoms, mode of spread and available treatment among the population affects the health seeking behaviour of patients and might promote delay in diagnosis, improper treatment, poor compliance to medications and development of drug resistance.[5,6]

According to the World Health Organisation (WHO), TB is the leading infectious cause of death worldwide and there were 10.4 million TB cases and 1.7 million deaths in the year 2016.[7] Access to TB care has improved worldwide and TB mortality rate has shown 37% decline since 2000. Between 2000 and 2016, 53 million lives were saved through effective diagnosis and treatment of TB. On the other hand, the number of people diagnosed with multi-drug resistant TB (MDR-TB) is on the rise globally. An estimated 0.49 million people developed MDR-TB and 0.11 million were diagnosed with Rifampicin Resistant TB (RR-TB) in 2016. The incidence of MDR-TB/RR-TB was about 4.1% in new cases and 19% in previously treated cases.[7]

India contributed to 25% of the global incident TB cases and about 26% of global TB-related deaths in 2016. In Tamilnadu, around 93327 TB cases were notified in the year 2017 among which 3889 cases were from the district of Kancheepuram, Tamilnadu.[8] The Revised National TB Control Programme (RNTCP) has been progressive in addressing issues related to TB control in the country. The National Strategic Plan (NSP) 2017-2025 for TB elimination has proposed various innovative steps to rapidly bring down the TB incidence and mortality in India. Despite the availability of services for TB diagnosis and treatment across the country, the burden of TB is still high.[8]

In May 2014, the World Health Assembly passed a resolution approving with the new post-2015 'End TB Strategy' with its ambitious targets. End TB strategy interventions fall under three pillars:

- Integrated, patient-centred care and prevention
- Bold policies and supportive systems
- Intensified research and innovation.

Bold policies and supportive systems require intense participation by the government, private stake holders and communities.[9] To improve the treatment outcomes and to bring down the incidence of TB, community participation plays a pivotal role.[10,11] In order to improve the health seeking behaviour, the population should have the correct knowledge about the disease, should be aware on the facilities available for free diagnosis and treatment in the public healthcare centres.[12]

Based on the above background, this study was carried out with the objective to determine the knowledge, attitude and practices regarding pulmonary tuberculosis in a rural area of Kancheepuram district in Tamilnadu, India, in order to ascertain the gaps existing in the study area and to plan possible corrective measures.

METHODS

Study design

This is a community based cross sectional descriptive study.

Study area and population

The Study was conducted in Serappanachery, the rural field practice area attached to a Medical College in Kancheepuram district, Tamil Nadu. The annual case notification rate of TB for Kancheepuram district was 106/lakh/year for 2017 which is relatively less than the State case notification rate (119/lakh/year) and National rate (138.3/lakh/year).[8] There are a total of twenty villages in the study area, the total population is 21187 (males- 10817, females- 10370) and the total number of households are 4489. The Study population included individuals residing in the study area and aged 18 years and above. The study was done for a period of three months, from January 2018 to March 2018.

Sample size and Sampling technique

The Sample size was calculated based on the prevalence of TB knowledge identified in a study done by Easwaran et al in the year 2015 in a rural area of Tamilnadu which showed that 34.4% of the population knew atleast one symptom of TB.[13] Using the formula $4pq/d^2$, with the allowable error of 5%, the sample size was calculated to be 361. Adding 10% non-response rate, the sample size was calculated to be 397, which was rounded off to 400.

Systematic random sampling was used to identify the study participants. Sampling interval was calculated as follows: Total number of households in Serappanachery (N)= 4489, Sample size (n)= 400, Sampling interval is N/n= 4489/400= 11.2. Thus every 12th household from the first randomly visited household in the centre of the study area was selected for identifying an eligible study subject. If there was no eligible respondent in the selected household, the next house with the eligible study subject was selected. From that house, the next 12th household was selected. This procedure was followed till the desired sample size was reached.

Inclusion and exclusion criteria

Resident individuals aged 18 years and above and willing to participate were included in the study. Individuals who stayed as guests in the selected households, those who were <18 years of age and who had chronic illnesses were excluded from the study.

Data collection

Data was collected from eligible and willing participants using a pre-tested, structured questionnaire, adapted from the sample questionnaire in the guide to developing knowledge, attitude and practice surveys developed by the World Health Organization and Stop TB Partnership.[14] Socio-demographic information including age, gender, occupation, education and socio economic status were collected. The knowledge of the participants on symptoms suggestive of PTB, cause of TB, treatment

and preventive measures, attitude and practices regarding TB disease were also collected.

Statistical analysis

Data collected were entered in Microsoft Excel and analysis was done in SPSS software version 16.0. Data were presented using descriptive and analytical statistics. Chi-square test was used to compare the differences in proportions with the significance level set at $p \leq 0.05$. Binary logistic regression model, which included variables with statistical significance on the Chi-square test, were used to examine factors associated with knowledge, attitude and practices of TB among the participants. Odds ratio (OR) with 95% confidence intervals was used to report the association between the exposure variables and outcome variables.

Outcome variables

The three main outcome variables in this study were knowledge, attitude and practices towards pulmonary TB among the study participants. These variables are composite scores and each outcome was measured using answers given by study respondents to several set of questions. The content of the questions for each outcome and how these outcomes were scored are summarized below.

Knowledge of community on TB

The Knowledge of the study participants on TB was assessed using the following components- awareness about the cause of TB (bacteria), able to identify PTB as a communicable disease, knowledge on the mode of transmission (airborne spread), knowledge on the common symptoms (cough >2 weeks, weight loss, fever, loss of appetite), aware that PTB is a treatable disease, knowing that PTB can be treated with drugs given at health facility, and aware that PTB is preventable. Each component was given a score of 1 for correct response and 0 for incorrect response/answer not known. The scores to these questions were added together to generate the total score (out of the maximum score of 10). If the total knowledge score exceeds 5 (>50%), the individual is categorized as having "adequate knowledge", otherwise the individual is categorized as having "inadequate knowledge".

Attitude of the community on TB

Participants' attitude towards PTB including stigma was assessed using the following components- acknowledge that anyone can be affected with TB disease, consider TB as a serious disease, positive attitude if they were diagnosed with TB and having a desire to help the affected individuals. Each response consistent with the positive attitude towards the disease was given a score of 1 and if otherwise, a score of 0. The total score (out of the maximum score of 4) was calculated by adding the scores to individual questions. If the total score exceeds 50%, the participant is classified as having "positive attitude" and if not, the participant is classified as having "negative attitude".

Practices towards TB

Practices towards TB was assessed using the following components- consulting a healthcare professional about their illness, preferring the treatment available in the health facility, seeking health facility if they had symptoms suggestive of PTB or if symptoms last >2 weeks and the positive support from the community for patients suffering from TB. Each response consistent with good practice was given a score of 1, and if otherwise, a score of 0. The total score (out of the maximum score of 4) was calculated by adding the scores to individual questions. The composite score for each individual was categorized using the cut off of 50% with scores above the cut off as "good practice" and if otherwise as "poor practice".

Ethical approval and informed consent: Ethical approval was obtained from Institutional Ethics Committee of Sree Balaji Medical College and Hospital. Written Informed consent was obtained from the study participants before data collection, after explaining about the objectives of the study.

RESULTS

Socio-demographic characteristics of the study population

A total of 400 subjects participated in the study. The socio-demographic characteristics of the study participants are summarised in Table 1. Participants involved in this study were in the age group of 19-64 years. The mean age (standard deviation) of the participants was 38 (±11.5) years. About 35% of the respondents belonged to the age group 31-45 years and around 32% belonged to 18-30 years. Male participants were predominantly higher (64.7%) compared to females (35.3%).

Majority of the respondents were married (84.5%) and 13.5% were unmarried. With regard to religion, 90.4% were Hindus. About 59.5% of the study subjects belonged to nuclear families. About 67% were employed and 1.3% had retired from employment. Government health facility was the preferred place of treatment for illness for 50.7% of the subjects. According to modified BG Prasad socioeconomic classification (2017), 51.5% belonged to middle class and 22.7% to lower middle class. Regarding the educational status, 8.3% were illiterates and 46.3% have studied up to middle school.

Table 1: Socio demographic characteristics of the respondents (n=400).

S.No	Characteristics	Number	Percentage (%)
1.	**Gender**		
	Male	259	64.7
	Female	141	35.3
2.	**Age in years**		
	18-30	130	32.5
	31-45	141	35.2
	46-60	122	30.5
	>60	7	1.8
3.	**Marital status**		
	Single	54	13.5
	Married	338	84.5
	Divorced/separated	4	1
	Widowed	4	1
4.	**Religion**		
	Hindu	362	90.4
	Christian	21	5.3
	Other	17	4.3
5.	**Type of family**		
	Nuclear	238	59.5
	Joint	140	35
	Extended joint	22	5.5
6.	**Occupation**		
	Employed	268	67
	Unemployed	127	31.7
	Retired	5	1.3
7.	**Education**		
	Illiterate	33	8.3
	Primary and middle school	185	46.3
	High and Hr sec	127	31.7
	Graduate and above	55	13.7
8.	**Usual place of Rx for illness**		
	Govt institution	203	50.7
	Private hospital/clinic	44	11
	Ayush practitioners	54	13.5
	Pharmacy	55	13.8
	Self medication	44	11
9.	**Socio-economic class (modified BG Prasad classification 2017)**		
	Upper middle	99	24.8
	Middle	206	51.5
	Lower middle	91	22.7
	Lower	4	1

Knowledge of the participants about the cause, symptoms, transmission, prevention and treatment of PTB

About 45.5% of the study subjects had adequate knowledge on PTB (Figure 1) and 54.5% had inadequate knowledge. Most of the study participants (91.5%) had heard about tuberculosis. Table 2 summarises the different components of participants' knowledge towards TB. The main sources of information were newspaper and magazines (66.2%), family/friends/neighbours (60.7%) and media/internet (44.3%). Cough was the most commonly mentioned symptom of PTB and other symptoms reported were weight loss (54%), fever (32.3%) and loss of appetite (46.3%).

The fact that PTB can be transmitted from a patient to another person was known to 79% of the respondents and 17.5% didn't know that it is a transmissible disease. Transmission of PTB through air was correctly reported by only 27% of the subjects. Other modes of transmission mentioned by the participants were sharing items (8.8%),

eating from the same plate (16.5%), through touching items in public places (21.7%) and through handshakes (7.5%).

A bacterium as the cause for PTB was mentioned by 19.5% of the subjects. The other causes of TB reported by them were cold air (14.5%), dust (2.8%), hot climate (11.5%), tobacco use (22.8%) and poor food intake (20.5%). Nearly 35% of the participants knew that TB transmission is preventable and 62% mentioned that they didn't know whether the disease transmission could be prevented. TB was considered as a curable condition by 71% of the participants. About 25.5% didn't know whether TB could be cured. Nearly 59% said that TB can be treated with medicines given in health institutions and 12.5% mentioned that resting at home is sufficient for cure.

Table 2: Knowledge of the participants on cause, symptoms, transmission, treatment and prevention of PTB.

S.No	Variables	Number	Percentage (%)
1.	**Cause of PTB**		
	Bacteria	78	19.5
	Smoking/tobacco use	91	22.8
	Shortage of food	82	20.5
	Cold air/dust/hot climate	115	28.7
	Don't know	34	8.5
2.	**Symptoms of PTB** *		
	Cough >2 weeks	249	62.3
	Weight loss	216	54
	Loss of appetite	185	46.3
	Fever	129	32.3
3.	**PTB can be transmitted from one person to another**		
	Yes	316	79
	No	14	3.5
	Don't know	70	17.5
4.	**How can a person get PTB?**		
	Through air when a person with TB sneezes or coughs	108	27
	Through sharing items/eating from same plate	101	25.3
	Through touching items in public places/handshakes	117	29.2
	Don't know	74	18.5
5.	**Transmission of PTB is preventable**		
	Yes	141	35.3
	No	11	2.7
	Don't know	248	62
6.	**PTB is curable**		
	Yes	284	71
	No	14	3.5
	Don't know	102	25.5
7.	**How can PTB be cured**		
	Medicines given in health institutions	239	59.7
	Herbal remedies	21	5.3
	Home rest without medicine	50	12.5
	Praying	11	2.7
	Self-treatment	25	6.3
	Don't know	54	13.5

* Multiple responses

Attitude of the participants towards PTB

Study participants' attitude towards PTB is summarised in Table 3. Overall 14.7% of the participants had positive attitude (Figure 1) and 85.3% had negative attitude towards PTB.

Nearly 41% of the subjects considered TB as a very serious disease and 15% as not very serious illness. When asked if anybody can get PTB, 20.7% replied 'yes', and 18% said they didn't know. Regarding the participants' reaction if they were diagnosed with PTB, 25.3% said they would experience fear, 23.5% said they will feel embarrassed, 17.2% mentioned that they would be

surprised, and 12.5% said they will face the situation confidently. When enquired about their feeling towards people with PTB, 28.8% said they would feel compassionate but tend to stay away from the infected people. Desire to help the patients was expressed by 21.5% of the subjects. Nearly 19% expressed fear as the patients might infect them and 13.2% denied having any particular feeling towards PTB patients.

Table 3: Participants' attitude towards PTB.

S. No	Attitude towards TB	Number	Percentage (%)
1	**Opinion about seriousness of TB disease**		
	Very serious	167	41.7
	Somewhat serious	138	34.5
	Not very serious	61	15.3
	Don't know	34	8.5
2	**Anybody can get PTB**		
	Yes	83	20.7
	No	245	61.3
	Don't know	72	18
3	**Reaction if diagnosed with PTB**		
	Fear	101	25.3
	Surprise	69	17.2
	Confident	50	12.5
	Hopelessness	52	13
	Embarrassment	94	23.5
	Don't know	34	8.5
4	**Feeling towards people with PTB**		
	Compassion and desire to help	86	21.5
	Feel compassion, but tend to stay away from them	115	28.8
	It is their problem, I can't get TB	37	9.2
	I fear them because they may infect me	75	18.8
	No particular feeling	53	13.2
	Don't know	34	8.5

Table 4: Practices of the participants towards PTB.

S. No	Practice	Number of participants	Percentage (%)
1	**Who would you talk to if you had PTB?**		
	Doctor or other medical worker	156	39
	Spouse	40	10
	Parent	54	13.5
	Close friend	49	12.2
	Children	37	9.3
	Other family members	30	7.5
	Don't know	34	8.5
2	**What would you do if you thought you had symptoms of PTB?**		
	Self-treatment options	57	14.3
	Go to health facility	196	49
	Go to pharmacy	65	16.2
	Go to traditional healers	37	9.3
	Don't know	45	11.2
3	**If you had symptoms of PTB, at what point would you seek medical help?**		
	When treatment on my own doesn't work	143	35.8
	When symptoms that look like PTB last for >2 weeks	10	2.5
	As soon as I realise my symptoms might be related to TB	159	39.7
	Don't know	88	22
4	**Behaviour of the Community towards people with PTB**		
	People in the village reject him/her	53	13.3
	People are friendly but they try to avoid him/her generally	189	47.2
	People mostly support and help him/her	102	25.5
	Don't know	56	14

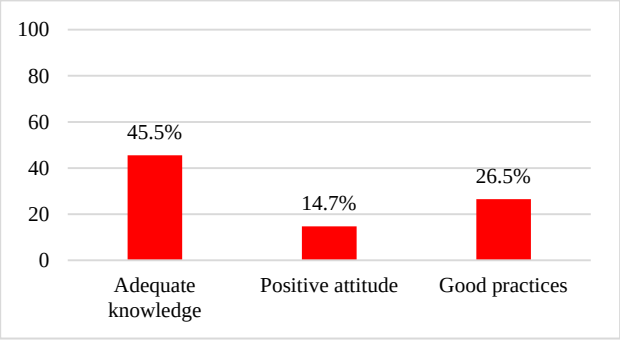

Figure 1: Graph showing the overall level of knowledge, attitude and practices related to pulmonary TB (in percentage) among the study participants (n=400).

Practices of the participants towards PTB

The participants' practices towards TB are presented in Table 4. Overall, 26.5% had good practices (Figure 1) and 73.5% had poor practices related to PTB. Doctor or other medical workers would be the point of contact for 39% of the participants if they had TB. Nearly half of the participants said they would approach a health facility if they had suspicion of suffering from TB. About 16.2% mentioned that they would get medicines from pharmacy for the symptoms, 14.3% preferred self-treatment, and 9.3% said they would take treatment from traditional healers. Nearly 40% said they would seek medical help as soon as they realize their symptoms might be due to PTB. Work commitment was the major reason given by the participants (45.5%) for not going to a health facility for treatment.

Table 5: Factors associated with participants' overall knowledge, attitude and practices on PTB.

	Variables			AOR (95% CI)	Chi square	P value
I.	**Knowledge**	**Adequate, [n (%)]**	**Inadequate, [n (%)]**			
a.	Age (in years)					
	≤ 45	160 (59)	111 (41)	4.86 (2.67-8.85)	26.78	0.001
	> 45	22 (17.1)	107 (82.9)	ref		
b.	Type of family					
	Nuclear	138 (58)	100 (42)	1.91 (1.08-3.38)	4.98	0.026
	Joint/Extended	44 (27.2)	118 (72.8)	ref		
II.	**Attitude**	**Positive, [n (%)]**	**Negative, [n (%)]**			
a.	SE class					
	Middle class and above	53 (17.4)	252 (82.6)	2.59 (1.07-6.32)	4.4	0.036
	Below middle class	6 (6.3)	89 (93.7)	ref		
b.	Knowledge level					
	Adequate	38 (20.9)	144 (79.1)	2.09 (1.16-3.77)	6.01	0.014
	Inadequate	21 (9.6)	197 (90.4)	ref		
III.	**Practices**	**Good, [n (%)]**	**Poor, [n (%)]**			
a.	Age (in years)					
	≤ 45	89 (32.8)	182 (67.2)	2.01 (1.07-3.77)	4.75	0.029
	> 45	17 (13.2)	112 (86.8)	ref		
b.	Knowledge level					
	Adequate	70 (38.5)	112 (61.5)	2.46 (1.49-4.05)	12.435	0.001
	Inadequate	36 (16.5)	182 (83.5)	ref		

AOR: adjusted odds ratio; CI: confidence interval; ref: reference

When enquired about the cost of TB treatment, 30.7% said it would be reasonably expensive, 27.5% said it would be moderately expensive and 13% felt that it would be very expensive. Only 20.3% of the subjects mentioned the availability of TB drugs free of cost in government health centres. When asked about the community's approach to people with PTB, 47.2% of the participants said the community would be friendly but tend to avoid the patients. About 13% said the village people will reject them and 25.5% mentioned that community will support and help the patients.

Factors associated with participants' overall knowledge on PTB

Factors that were found to be statistically associated with adequate knowledge on TB were age ≤45 years compared to age >45 years (COR-7.01, 95% CI: 4.17-11.78, p-0.0001), females compared to males (COR-1.54, 95% CI: 1.02-2.33, p-0.04), nuclear family compared to other types of family (COR-3.7, 95% CI: 2.4-5.7, p-0.0001), education of high school and above (COR-2.6, 95% CI:

1.74-3.91, p-0.0001), and socio-economic class of middle class and above (COR-2.44, 95% CI: 1.49-4.0, p-0.0003). On logistic regression analysis, the factors that were associated with adequate knowledge were age ≤45 years (AOR: 4.86, 95% CI: 2.67-8.85, p-0.001) and nuclear type of family (AOR: 1.91, 95% CI: 1.08-3.38, p-0.026) (Table 5).

Factors associated with attitude towards PTB

Education of high school level and above (COR: 1.77, 95% CI: 1.01-3.10, p 0.04), middle socio-economic class and above (COR: 3.12, 95% CI: 1.3-7.5, p 0.007) and having adequate knowledge on TB (COR: 2.48, 95% CI: 1.39-4.4, p 0.0016) were found to be associated with positive attitude on PTB. Logistic regression analysis showed that higher socioeconomic class (AOR: 2.59, 95% CI: 1.07-6.32, p 0.036) and having adequate knowledge on TB (AOR: 2.09, 95% CI: 1.16-3.77, p 0.014) had a statistically significant association with positive attitude towards PTB (Table 5).

Factors associated with practices towards PTB

On univariate analysis, age ≤45 years (COR: 3.22, 95% CI: 1.82-5.7, p 0.0001), female gender (COR: 1.79, 95% CI: 1.14-2.82, p 0.012), adequate knowledge on TB (COR: 3.16, 95% CI: 1.98-5.03, p 0.0001) were the factors found to be statistically associated with good practices on PTB. On Logistic regression analysis, age ≤45 years (AOR: 2.01, 95% CI: 1.07-3.77, p 0.029) and having adequate TB knowledge (AOR: 2.46, 95% CI: 1.49-4.05, p 0.001) had a statistically significant association with good practices regarding PTB (Table 5).

DISCUSSION

This study conducted among 400 adults in a rural area of Tamilnadu shows the present status of knowledge, attitude and practices related to TB in the study population with varied and interesting outcomes, which are discussed below.

Knowledge regarding PTB

Our study showed that the Community is familiar about tuberculosis as a disease as around 92% of the participants have heard about TB. This is similar to a study done in Ethiopia by Tolossa et al where 94.9% were aware of the disease and a study in Tamilnadu by Chinnakali et al where 94% have heard about the disease.[15,16] However, the knowledge on the bacteria as the cause of TB was limited, as many of them suggested other causes like cold air, hot climate, tobacco smoke and food shortage. This low awareness on the cause was also reported in a Sudanese study in which only 2% respondents and in the Ethiopian study in which 22.9% respondents had knowledge on the cause of TB.[15,17] A similar study among sandstone quarry workers in Rajasthan reported very low awareness (1.6%) on the cause of TB.[18] On the other hand, Koay TK et al in their study in Malaysia and Malhotra et al in their study in Delhi stated that nearly half of the participants were aware of the cause of TB.[19,20] Easwaran et al in his study in a similar rural setting, reported a much lower percentage of awareness (10.6%) on the causation.[13] Awareness on the causal factor of disease is very essential as it influences the patients' health seeking behaviour.

Regarding the awareness on PTB symptoms, 62.3% reported cough as the main symptom. In a study done by Konda SG in an urban township in Mumbai, 48.4% of the subjects, and in the study by Chinnakali et al in Puducherry, 82% of the subjects, and in the study by Tolossa et al in Ethiopia, 72.4% of the subjects mentioned persistent cough as the most common symptom.[15,16,21] The awareness on the symptoms varies widely with different study settings. Knowledge on the symptoms of PTB is very vital as it guides the patients in seeking medical care without delay. The fact that PTB is a transmissible disease was stated by 79% of the respondents. In the study by Konda, the knowledge on transmission was higher (87%) compared to our study.[21] This could be due to the difference in the study setting as their study was done in an urban township whereas our study was done in a rural area. Similarly, Tolossa et al reported 80% of awareness regarding PTB transmission in their study.[15]

In our study, less number of participants (35.3%) was aware that PTB transmission is preventable. Whereas in the study by Chinnakali et al, 75% of the subjects and in the study by Elbur et al, 58.6% mentioned that PTB can be prevented.[16,17] Knowledge that PTB is preventable was found to be very high (98.2%) in a study by Sharma et al among the general population of Delhi.[22] About 71% of the subjects mentioned TB as a curable disease. Sharma et al, Chinnakali et al and Elbur et al, in their study in Delhi, Puducherry and Sudan respectively reported that 94.4%, 87% and 80.3% of the participants were aware that PTB is curable.[16,17,22]

In this study, being part of a nuclear family and age ≤45 years were significantly associated with adequate PTB knowledge. Tolossa et al reported that people with high education level had increased odds of having good knowledge towards PTB.[15] Konda in their study found that low knowledge was associated with less education and low income.[21]

Attitude towards PTB

Around 42% of the respondents considered TB as a very serious disease, whereas the Ethiopian study reported that 55.4% of the respondents considered TB as a very serious disease.[15] About 25% respondents reported that they would feel afraid if they were diagnosed with PTB and a very less proportion of participants (12.5%) said they would face the situation with hope and confidence. In the

study by Tolossa et al, about 69.3% mentioned fear as their predominant feeling if they were found to have PTB.[15] Koay in his study reported embarrassment as the feeling of 41% of the study subjects if they were found to have PTB.[19] Compassion and desire to help the patients infected with TB was noted in only 21.5% of the subjects. The fear of getting infected by patients was mentioned by 18.8% of the participants. Having adequate knowledge on PTB and higher levels of socioeconomic status were found to be associated with a positive attitude. More awareness has to be created among the population to bring a positive attitude towards TB patients.

Practices related to PTB

With regard to the practices, in our study, about half of the participants said they would go to a health facility if they had symptoms of PTB. This proportion was high in the study by Tolossa et al, where 71% mentioned they would go to health facility in case of any symptoms suggestive of TB.[15] Whereas around 40% preferred pharmacy, self-treatment or traditional healers. Nearly 36% of the subjects said that they approach medical care only if their self-treatment options don't work. Work commitment, difficulties with travel to clinic, negative attitude of the health workers were the major reasons given by the subjects for not going to the health facility for care.

Regarding the cost of PTB treatment, only 20% knew that TB treatment is available free of cost in government health centres, whereas this was found to be 84% in a study by Chinnakali et al, 34% in a study by Kar et al, and 48.8% in a study by Mushtaq et al.[16,23,24] This emphasizes the need to strengthen the health education activities, as nearly 80% of the subjects didn't know about the free anti-TB drugs provided by the government. Community support to the PTB patients was also found to be less as nearly half of the respondents said the villagers generally tries to avoid the PTB patients. Practices also varied with age and knowledge level of participants on PTB. The importance of social support to the patients affected with PTB needs to be inculcated in the minds of the population.

Limitations of the study

This study done in the rural field practice area of our Institution with a sample of 400 adults from a population of 21187 could have been planned on a larger scale, covering larger populations to have a better understanding on knowledge, attitude and practices related to PTB, so that the outcomes could be generalized to a larger study area.

CONCLUSION

The study showed that the overall level of knowledge (45.5%) was low and the overall attitude (14.7%) and practices (26.5%) related to PTB was highly inadequate. These findings highlight the need to improve the awareness about TB, by giving greater emphasis on the causation, symptoms, early diagnosis and treatment for preventing and curing the disease. A positive attitude needs to be inculcated with the rural masses so that it leads to good practices in the management of TB patients in the Community, which would in turn help in achieving the goals and targets of the RNTCP. Hence the recognized gaps in the knowledge should be kept in mind while planning for TB awareness campaigns and information, education and communication (IEC) activities need to be intensified for the rural population to bring a meaningful change in their knowledge, attitude and practices towards PTB in the primary healthcare setting.

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