

## Assessment of Knowledge about Tuberculosis among Newly Diagnosed Patients Registered in District Tuberculosis Center, Bhavnagar, Gujarat

Rahul Damor\*, M. P. Singh\*\*\*, Dharmendra Jankar\*\*, Sanat Rathod\*\*\*\*, Vibha Gosaliya\*\*\*\*\*

\*Asst. Professor in Dept. of Community Medicine, Government Medical College, Surat, \*\* RSCO, Ahmedabad, \*\*\*Professor & Head, \*\*\*\*Tutor, \*\*\*\*\* Asst. Professor in Dept. of Community Medicine, Govt. Medical College, Bhavnagar

**Abstracts:** **OBJECTIVE:** Objective of this study was to determine the level of knowledge about tuberculosis among patients registered in district tuberculosis center, Bhavnagar. **METHODS:** A community based cross-sectional study was carried out among New Pulmonary Tuberculosis patients registered in District Tuberculosis Centre, Bhavnagar during 1<sup>st</sup> January, 2009 to 30<sup>th</sup> April, 2009. Data collection was carried out between 1/05/2009 to 30/06/09 at 144 patients' house with help of pre-tested structured questionnaire which comprised of socio-demographic variables and variables to assess the knowledge about tuberculosis. **RESULTS:** In our study, majority of the patients were male (70.1%) with the most commonly involved age group of 21 to 30 years (30.6%). Nearly one-third (31.9%) of the respondents were illiterate and 44% had received primary education. Only 6.9% of study subjects had correct knowledge about the cause of the disease. Knowledge regarding major symptoms was found in only 47% & knowledge about mode of transmission was found in only 30.6% of respondents. Majority of the respondents (97.2%) have a correct knowledge about the duration of treatment of Tuberculosis. **CONCLUSION:** In this study, majority of study subjects had poor knowledge about cause of tuberculosis, its mode of transmission & major symptoms while knowledge regarding the duration of treatment was found better among most of the respondents. Proper knowledge and education about tuberculosis is vital to cope the challenge of this devastating disease. DTC, being the main center providing treatment, can play a critical role to raise knowledge among the patients about tuberculosis & its prevention. [ Damor R et al NJIRM 2012; 3(3) : 90-94]

**Key words:** Knowledge, Prevention, Tuberculosis

**Author for correspondence:** Dr. Rahul Damor, Dept. of Community Medicine, Government Medical College, Surat - 395001, India. E-mail: dr\_rahul\_damor@yahoo.co.in.

**Introduction:** Tuberculosis, a disease caused by the bacterium *Mycobacterium Tuberculosis*, has affected mankind for over 5000 years and the disease continues to be a major cause of morbidity and mortality.<sup>1</sup> In 2008, nearly 9.4 million new cases and 1.8 million deaths were reported due to TB, and over 90% of these occurred in the low and middle income countries.<sup>2</sup> India is the highest TB burden country globally, accounting for one fifth of the global incidence and 2/3rd of the cases in south East Asia. Nearly 40% of the Indian population is infected with the TB bacillus. Each year, 1.9 million new cases of TB occur in the country, of which about 0.8 million are infectious new smear positive pulmonary TB cases. The National Annual Risk of Tuberculosis Infection was estimated at 1.5% i.e. 75 new smear positive pulmonary TB cases are expected per 100,000 population annually. Every day, more than 5,000 people develop TB disease, and nearly 1,000 people die of TB, i.e. 2 deaths every 3 minutes.<sup>1</sup>

A number of factors are responsible for this devastating health problem which includes noncompliance with control programs, inadequate diagnosis and treatment, increasing migration due to natural and man made disasters and emerging epidemic of HIV/AIDS.<sup>3</sup> All these are fueled by population explosion, rising number of multi resistance tuberculosis, poor socio-economic conditions and lack of knowledge and awareness about tuberculosis.<sup>4</sup>

Prevention and control of tuberculosis need a number of factors to intervene. Provision of specific health information has proved successful in health education campaigns.<sup>5</sup> Good knowledge about tuberculosis among patients is of prime importance in this regard.<sup>4</sup> Several studies have investigated TB knowledge among different study samples in high incidence countries.<sup>6-9</sup> Thus, objective of this study was to assess the level of knowledge about tuberculosis among patients registered in District TB Center, Bhavnagar. This work will help to evaluate the level of knowledge and understanding about

tuberculosis and thus guide to design health promotion and public awareness programs in this regard.

**Material And Methods :** This was a community based cross-sectional study carried out in Bhavnagar city for which we obtained list of all registered New Pulmonary Tuberculosis patients in District Tuberculosis Centre. Total 163 new Pulmonary TB patients were registered in DTC Bhavnagar during 1<sup>st</sup> January, 2009 to 30<sup>th</sup> April; 2009 out of which 144 patients were selected for interview & rest (19) were not included in the study due to various reasons like, 5 patients were died before we made home visit, 4 patients were transferred to other TB units for continuation of treatment, 1 patient has defaulted and changed residence, 9 patients refused to participate in the study. Extra pulmonary TB cases were excluded in our study as they are not responsible for spreading infection in the community. The selected patients were visited at their home address by taking prior appointment on phone between 1/05/2009 to 30/06/09 with help of questionnaire pre tested and modification incorporated in the final version. Some patients were not available at home after 2 to 3 home visits were collected information on Phone. Verbal consent of every patient was taken before starting interview. Data was analyzed with help of epi info software version 3.5.1. The Chi square test was used to compare different proportions and the association between knowledge and different variables. The 5% level of significance was used as the cut off for statistical significance. Ethical consideration: The study was approved by the Institutional Review Board, Government Medical College, Bhavnagar.

**Result:** Age Among 144 new tuberculosis patient interviewed, majority of the patients were male 101(70.1%) with the most commonly involved age group of 21 to 30 years (30.6%) [Table 1]. Nearly one-third (31.9%) of the respondents were illiterate and 44% had received primary education. Other characteristics of the patients like religion, caste, marital status, occupation & socio-economic status are also described in table 1.

Table 2 shows that awareness in respondent regarding germ as a cause of TB which shows that

only 10(6.9%) have a correct knowledge about the cause of disease.

**Table 1: Socio demographic characteristics of study subjects**

Characteristics (n= 144)	No (%)
Sex	
Male	101 (70.1%)
Female	43 (29.9%)
Age group	
1 to 10 years	10 (6.9%)
11 to 20 years	24 (16.7%)
21 to 30 years	44 (30.6%)
31 to 40 years	25 (17.4%)
41 to 50 years	17 (11.8%)
51 to 93 years	24 (16.7%)
Religion	
Hindu	120 (83.3%)
Muslim	24 (16.7%)
Caste	
General category	11 (7.6%)
OBC	101 (70.1%)
SC	30 (20.8%)
ST	2 (1.4%)
Marital status	
Unmarried	39 (27.1%)
Married	93 (64.6%)
Divorced	4 (2.8%)
Widow/ widower	8 (5.6%)
Occupation	
Unemployed	49 (34.0%)
Skilled worker	34 (23.6%)
Unskilled Labourer	30 (20.8%)
House wife	25 (17.4%)
Service	6 (4.2%)
Socio economic status	
Class II	8 (5.6%)
Class III	35 (24.3%)
Class IV	71 (49.3%)
Class V	30 (20.8%)
Education (n = 141)	
Illiterate	45 (31.9%)
Primary	62 (44.0%)
Secondary	28 (19.9%)
Higher secondary	3 (2.1%)
Graduate and post graduate	3 (2.1%)

Majority of respondents either have incorrect knowledge (45.2%) or no knowledge (47.9%) about

the cause of TB. All respondents who have a correct knowledge were literate while among illiterate respondents no one has a correct knowledge about the cause of disease. Some respondents cited inadequate food intake (13.9%), smoking (36.1%) and alcohol (30.6%) as a cause of TB which are not direct cause of TB but they are predisposing factors for TB.

**Table 2: Knowledge regarding cause of TB according to literacy status**

Knowledge of Cause	Literate n = 96	Illiterate n = 48	Total n = 144*
Correct knowledge (Germ)	10 (10.4)	0 (0.0)	10 (6.9)
Incorrect knowledge (Others)	45 (46.9)	20 (41.7)	65 (45.2)
No knowledge (Ignorant)	41 (42.7)	28 (58.3)	69 (47.9)

Correct knowledge of all the 4 major symptoms (Cough, anorexia, fever and weight loss) were found only in 68(47.2%) of respondents. Among literate respondents, 54(56.2%) had correct knowledge while among illiterate respondents, 14(29.1%) respondents had a correct knowledge of all major symptoms of TB. Difference of correct knowledge regarding all major symptoms of TB among literate and illiterate respondents was statistically significant [Table 3].

**Table 3: Knowledge of all major symptoms of TB and literacy**

Knowledge of major symptoms	Literate n = 96	Illiterate n = 48	Total n = 144
Correct	54 (56.2%)	14 (29.1%)	68 (47.2%)
No knowledge	42 (43.8%)	34 (70.9%)	76 (52.8%)
Chi square test (Yates corrected) = 8.36 P value = 0.003			

Among literate respondents 41 (42.7%) respondents had correct knowledge regarding mode of transmission while among illiterate respondents only 3 (6.3%) respondents had a correct knowledge that the TB is transmitted through air [Table 4]. The

difference regarding knowledge about mode of transmission of TB among literate and illiterate respondents was found to be statistically significant, suggesting that literate respondents were more aware as compared to illiterate respondents. Among those respondents who have incorrect knowledge, mentioned water & food as a mode of transmission of TB. Two respondents were mentioned accumulation of secretion in lung & sexual intercourse as a mode of transmission.

**Table 4: Knowledge of mode of transmission according to literacy status**

Mode of transmission	Literate n = 96	Illiterate n = 48	Total n = 144
Correct knowledge (Air borne)	41 (42.7)	3 (6.3)	44 (30.6)
Incorrect knowledge (Others)	18 (18.8)	36 (24.9)	30 (20.8)
No knowledge (Ignorant)	37 (38.5)	33 (68.8)	70 (48.6)
Chi square test (Yates corrected) = 29.65, d.f = 3, p value= 0.0000001			

Most of the respondents 140 (97.2%) have a correct knowledge of proper duration of treatment of TB. Only 4 (2.8%) respondents have no knowledge about duration of treatment of TB [Table 5].

**Table 5 Knowledge of duration of treatment of TB according to gender**

Duration of treatment	Male n = 101	Female n = 43	Total n = 144
Correct knowledge (6 months)	99 (98.0%)	41 (95.3%)	140 (97.2%)
Incorrect knowledge	0 (0.0%)	0 (0.0%)	0 (0.0%)
No knowledge	2 (2.0%)	2 (4.7%)	4 (2.8%)

**Discussion:** Data on 144 registered New Pulmonary Tuberculosis patients in District Tuberculosis Centre investigated is discussed in the present paper. The study has identified a big gap of knowledge about tuberculosis in patients registered in DTC, Bhavnagar. Majority of study subjects do not know

about the cause of disease, major symptoms & mode of transmission of tuberculosis. These findings are consistent with an epidemiological study conducted to assess the knowledge and attitude about tuberculosis among the general population in Philippines, where only a quarter of the respondents knew about the cause of disease and 21% of them knew about its mode of transmission.<sup>7</sup> However, there was better understanding about the sign and symptoms of tuberculosis in our study subjects, where majority of the respondents knew that cough is more frequent symptom and majority also knew about at least one sign/symptom. These findings are consistent with a study conducted in Tanzania,<sup>11</sup> where more than 87% of the respondents knew at least one sign/symptom and cough was the most frequently mentioned symptom/sign of tuberculosis. It is a significant finding as this lack of knowledge may lead to poor responsiveness to the prevention programs.

The community's knowledge and perceptions about tuberculosis are important in influencing health seeking behavior considering the peculiar issues related to its long-term medications and compliance. Appropriate knowledge is of prime importance for control and prevention of many diseases and tuberculosis is no exception. This study concludes that knowledge about tuberculosis among the patients registered in DTC, Bhavnagar is low and highlights the importance for designing and implementing appropriate programs and interventions to disseminate the knowledge and information about tuberculosis in the general population. We also recommend more studies and research to assess knowledge and understanding about tuberculosis at larger and community basis. This should only be possible with integrated efforts by government and non-governmental health organizations, media and donor agencies along with active community participation.

In our study, it was found that knowledge about the duration of treatment is far better as compared to the knowledge of the cause, mode of transmission & major symptoms of TB. The reason behind this may be that this is the only knowledge which is provided by health care workers at the time of starting treatment. If some more attention is given

to other issues, the knowledge regarding cause, mode of transmission, symptoms may increase which might be helpful in the control of tuberculosis among general population. The results of this study should be interpreted with caution as the study was conducted among patient and not ideally representing the general population.

**Conclusion:** In this study, majority of study subjects had poor knowledge about cause of tuberculosis (6.9%), its mode of transmission (30.6%) & major symptoms (47.2%) while knowledge regarding the duration of treatment was found better (97.2%), among most of the respondents. Proper knowledge and education about tuberculosis is vital to cope the challenge of this devastating disease. DTC, being the main center providing treatment, can play a critical role to raise knowledge among the patients about tuberculosis & its prevention.

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