

Original Research Article

Health seeking behavior and reasons for “patient-related” diagnostic delay among pulmonary tuberculosis suspects attending designated microscopy centre of medical college in rural Puducherry

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ABSTRACT

Background: The main strategy of modern TB control is early detection and treatment of sources of infection to reduce the duration of infectiousness. Delay in diagnosis has health provider factors and client factors. Health seeking behavior and reasons for TB diagnostic delay is important and which is one of the agenda for operational research under Revised National Tuberculosis Control Program (RNTCP).

Methods: The present cross sectional study was conducted among 200 tuberculosis suspects attending the Designated Microscopy centre (DMC) of SMVMCH for a period of 2 months. Data was collected using a pre-designed questionnaire including sociodemographic details, health seeking behaviour, treatment delay and reasons for delay. Collected data was entered and analyzed in EPI_INFO (3.4.3). Descriptive statistics and significant association was established by the use of odd's ratio with 95% confidence interval.

Results: Among the study subjects most of them were between the age group of 15 to 60 years and majority of them were male. Symptoms about tuberculosis was known only to 40(20%) of the suspects and 85(42.5%) accepted that tuberculosis is a curable disease. Among the various factors leading to patient related diagnostic delay age, marital status and multiple symptoms shows significant association. The most common reason for the delay is not aware of the severity of the symptoms 126(63%).

Conclusions: There is poor knowledge about tuberculosis, its modes of spread and symptoms among Tb suspects. Patient related delays also common among them which warrant need for public health interventions to improve it.

Keywords: TB suspects, Diagnostic delay, DMC

INTRODUCTION

TB is one of the global problems and it is the second leading cause of death worldwide. India is the highest TB burden country in the world and accounts for nearly one fifth of global burden of TB. Every day, about 5000 people are developing the disease.¹ The main strategy of modern TB control is early detection and treatment of sources of infection to reduce the duration of infectiousness. Delay in diagnosis has health provider factors and client factors. The last ones include the health

seeking behavior of the population, and this is less known for the community groups with higher risk factors for tuberculosis (poverty, overcrowding, and isolation from PHC system providing modern TB treatment free of charge). Reasons for “patient-related” diagnostic delay include lack of recognition of symptoms, lack of priority to disease by the individual, low trust in the health provider or the western system of medicine, fear of the consequences of TB diagnosis (stigma, hospitalization, mandatory procedures for diagnosis or treatment, monetary cost and loss of income).² Various studies have

highlighted delay due to patients and health sector delay.³⁻⁶

Health seeking behavior and reasons for TB diagnostic delay is important and which is one of the agenda for operational research under Revised National Tuberculosis Control Program (RNTCP).² Hence the present study was conducted to find the reasons behind the “patient-related” diagnostic delay among the TB suspected patients visiting DMC (Designated Microscopy Centre) of Sri Manakula Vinayagar Medical College and Hospital (SMVMCH).

METHODS

Study setting and study design

This Cross Sectional Study was conducted at the Designated Microscopy Centre, (DMC) Sri Manakula Vinayagar Medical Collage and Hospital, Puducherry, during August – September, 2013. The present study was undertaken as part of ICMR (Indian Council of Medical Research), STS (Short Term Studentship) by the Department of Community Medicine, Sri Manakula Vinayagar Medical College and Hospital, Pondicherry, which is an active member in STF-RNTCP (State Task Force- Revised National Tuberculosis Control Program) mechanism and periodically organizes training program on RNTCP.

Sample size and sampling procedure

All TB suspects referred to the DMC from the outpatient Department of Pulmonary Medicine were included in the study. By this during the study period, we could cover 200 patients of TB suspects.

Data collection

After obtaining the written informed consent, the study subjects were interviewed by the first author using a pre-designed questionnaire for the following variables; patients socio-demographic characteristics, the onset of symptoms, time interval between the onset of symptoms and the first visit to any source of medical treatment, the first centre of visit, reason for seeking treatment from that centre, and reasons for the delay in their treatment.

Data analysis

Data was entered and analyzed using Epi Info software package (Version 3.4.3). Statistical analysis was done by using descriptive statistics and significant association was established by the use odds ratio with 95% confidence interval.

Ethical issues

Ethical principles such as respect for the persons, beneficence and justice were adhered. Ethical clearance

was obtained from the Research Committee and Institutional Ethics Committee of Sri Manakula Vinayagar Medical College and Hospital, Madagadipet, Puducherry.

Inclusion criteria

Tuberculosis suspects referred from Department of Pulmonary Medicine OPD to DMC.

Exclusion criteria

Pediatric TB suspects

Operational definitions for patient related diagnostic delay

Patient delay: It is defined as time interval between appearance of symptoms suggestive of pulmonary tuberculosis and their first contact with a health care professional or facility.

Acceptable patient delay: As no scientifically agreed criteria could be found in the literature upon which to base a definition of acceptable patient delay, so references were taken from a definition of acceptable patient delay. In a study done in India, they defined maximum acceptable patient delay of less than 21 days which was used in the present study.⁷

RESULTS

Among the 200 TB suspects interviewed, most of them were between the age group of 15 to 60 years and majority of them were male. Nearly three fourths of the study subjects have their health facility within 5 kilometres. Table 1 shows that among the TB suspects only 46 (23%) had knowledge of tuberculosis and regarding routes of transmission 39 (19.5%) can only able to say correctly. Symptoms about tuberculosis was known only to 40 (20) of the suspects and 85(42.5%) accepted that tuberculosis is a curable disease. Health seeking behaviour shows that 175 (87.5%) used the public health service followed by private practitioner (7%) and over the counter drugs (4%). The most common reason for seeking care from the centre is that they perceive that better care is provided.

Among the suspects that only 47 (23.5%) reached health centre less than 21 days of onset of symptoms. Among the various factors leading to patient related diagnostic delay age, marital status and multiple symptoms shows significant association with increased odds ratio. Age less than 50 years (1.1-12.2) and unmarried people (1.3-10.4) significantly seek health care facilities compared to more than 50 years and married people. People with more than one symptom (0.12-0.7) such as cough, sputum expectoration, blood tinged sputum, weight loss and fever more likely to seek care at the early stage. Sex, educational status, knowledge about TB and distance from health care facility does not show any significant association with diagnostic delay (Table 2).

Table 1: Knowledge and health seeking behaviour of the tuberculosis suspects.

Sr. no	Knowledge and health seeking behaviour	Frequency (%)
1	Knowledge about what is TB	46(23)
2	Knowledge about routes of transmission	39(19.5)
3	Knowledge about symptoms of tuberculosis	40(20)
4	Tb is a curable disease	85(42.5)
5	Availability of treatment at their village	14(7)
6	Treatment seeking place when they become ill	
	Self treatment	3(1.5)
	Public health service	175(87.5)
	Private practioner	14(7)
	Pharmacist	8(4)
7	Reasons to seek care from the centre	
	Better care received	112 (66)
	Was nearby	41(21.5)
	Suggested by friends and family members	28(14)
	Trusted by the people	26(13)
	Usually seek for common illness	15(7.5)
	More convenient time	5(2.5)
8	Diagnostic delay	
	Less than 21 days from symptoms	47(23.5)

Table 2: Socio demographic factors affecting diagnostic delay.

Variables	Patient delay <21 days N-47 (%)	Patient delay ≥21 days N-153(%)	Odd's ratio (95% CI)
Age (years)			
<50	6(50)	6(50)	3.5(1.1-12.2)
>50	41(21.8)	147(78.2)	
Sex			
Male	32(23)	107(77)	0.91(0.45-1.8)
Female	15(24.5)	46(75.5)	
Marital status			
Unmarried	9(50)	9(50)	3.7(1.3-10.4)
Married	38(20.8)	144(79.2)	
Education status			
Literate	16(21.3)	59(78.7)	0.8(0.4-1.6)
Illiterate	31(24.8)	94(75.2)	
Employed			
Yes	30(26.5)	83(73.5)	1.4(0.7-2.9)
No	17(19.5)	70(80.5)	
Knowledge of TB			
Yes	9(19.5)	37(80.5)	0.7(0.3-1.6)
No	38(24.6)	116(75.4)	
Distance			
<3 Kilometres	30(21.7)	108(78.3)	0.7(0.36-1.5)
>3 Kilometres	17(27.4)	45(72.6)	
Number of symptoms			
1 symptom	8(11.5)	61(88.5)	0.31(0.12-0.7)
>1 symptoms	39(29.7)	92(29.7)	

Table 3: Reasons for the delay.

S.no	Reasons for delay	Frequency (%)
1	Not aware of the severity of my symptoms	126 (63)
2	Not having a previous satisfactory experience with the health system	60 (20)
3	Cannot leave work (overlapping work hours with medical facility working hours)	37(18.5)
4	Cost	20 (10)
5	Difficulties with transportation/distance to clinic	12 (6)
6	Not sure where to go	5 (2.5)
7	Do not like attitude of medical workers	3(1.5)
8	Do not want to find out that something is really wrong	2 (1)
9	Do not trust medical workers	1(0.5)

The above Table 3 shows that most common reason for the delay is not aware of the severity of the symptoms 126 (63%). Not having satisfactory previous experience with the health facility lead to diagnostic delay among 60 (20%) suspects. Around 19% suspects told that overlapping working hours with medical facilities lead to diagnostic delay. Other important reasons for delay are cost (10%) and difficulty in transportation (6%) Very few study subjects said that they do not like the attitude of health care workers and not sure where to go.

DISCUSSION

The present cross sectional study was conducted in the DMC of the tertiary care centre among 200 Tuberculosis suspects. This study addresses one of the important operational research agenda of finding the health seeking behaviour and factors associated with the patient related delay among tuberculosis suspects. It shows that knowledge about tuberculosis, its modes of transmission and symptoms are low among them. Most of the people use public health service for treatment. Diagnostic delay was common in almost 75% of the suspects. Various factors such as age, marital status and more than one symptom show significant association in diagnostic delay. The common reasons for diagnostic delay perceived by the patients are not aware of the severity of the symptoms, not having satisfactory experience in health centre previously and overlapping working hours with medical facilities.

In our study, health seeking behaviour of the individuals was estimated and the knowledge about the TB among the study subjects was poor. Three fourth of the study population (77%) don't know about the Tuberculosis, its route of transmission, and the symptoms of the TB. This shows that there is lack of awareness about tuberculosis, its modes of spread and symptoms. But in a community based study conducted in Puducherry the knowledge about TB among general population is high which is contrary to this study.⁸ In a study in Tamil Nadu and West Bengal among tuberculosis patients also reported that level of awareness about tuberculosis, its modes of transmission and symptoms are poor.^{9,10} In a study conducted in Gujarat and Meerut among tuberculosis suspects showed that knowledge about modes of transmission and symptoms are much higher than the present study.^{11,12}

The initiation of treatment has both health sector and patient related delays. Several studies have estimated the patient and health system delays among TB patients in India. Those patient related delays ranged from 9-37 days, 15 days, 21 days, and 78 days.¹³⁻¹⁵ The total patient related delay observed in our study ranges from 15-120 days, majority of the study subjects sought treatment only after two weeks ranging 15-120 days. Patient related delay was found in nearly 74% of the suspects and significant factors in reducing patient delay are age less than 50 years, unmarried status and patients with multiple symptoms. In a similar study among Tb suspects in Jharkhand also reported that sex, religion, education, socioeconomic status and alcohol are factors significantly affecting patient delay.¹⁶ In a systematic review conducted in China found unemployment, low income, hemoptysis and positive sputum smears are consistently associated with patient related delay.¹⁷ In a study reported from Brazil among TB patients weight loss, sex, household income associated negatively with patient delay.¹⁸ Finding the reasons for delay is critical part of any effective TB control program. Patient delay may explain why many patients present with advanced disease and why a relatively high percentage of TB patients die. Furthermore, patient delays lead to increased spread of TB within the community.

In our study, we identified perceived reasons from TB suspects on patient related delays such as they were not aware of their symptoms, previous dissatisfactory health experience, lack of time to consult doctor because of their work, and patient's income. The previous studies for the patient related diagnostic delay listed reasons like patient's income, knowledge about the disease, rural residence, and low access to health care facilities.¹⁹

The strengths of the study are it was conducted among a sample of 200 tuberculosis suspects where most of the studies conducted TB patients. One of the limitations of study is that we have chosen a cut off of 21 days for patient related delay, if we had chosen another cut-off, we might have found other associations.

CONCLUSION

Our study demonstrated that there is poor knowledge about tuberculosis, its modes of spread and symptoms among Tb suspects. Patient related delays also common among them which warrant need for public health interventions, focusing on TB education programs, including awareness of early symptoms of disease and treatment.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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