

## Original article

**PERCEPTIONS OF TUBERCULOSIS PATIENTS ABOUT PRIVATE PROVIDERS BEFORE AND AFTER IMPLEMENTATION OF REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME****K. Jaggarajamma<sup>1</sup>, R. Balambal<sup>1</sup>, M. Muniyandi<sup>1</sup>, M. Vasantha<sup>1</sup>, Beena Thomas<sup>1</sup>, C. Nirupa<sup>1</sup>, G. Sudha<sup>1</sup>, V. Chandrasekaran<sup>1</sup> and Fraser Wares<sup>2</sup>***(Received on 21.7.2009. Accepted after revision on 25.8.2009)***Summary**

**Background:** Most of the persons with chest symptoms in India approach private providers (PPs) for health care. It has been observed that patients who start treatment with PPs for tuberculosis (TB) frequently switch over subsequently to the public sector. The reasons for this discontinuation and their perceptions of the TB care provided by the PPs are unknown.

**Objective:** To document the perceptions about PPs India's Revised National TB Control Programme (RNTCP) and the reasons for discontinuation of treatment with PPs and subsequent attendance at a public provider.

**Methods:** This was a cross sectional study on patients registered under TB programme during 1997 and 2005 in rural and urban areas. During this period patients who were initially diagnosed and treated for TB in a private clinic and subsequently shifted to public health facility were considered for the study. A semi-structured interview schedule was used to collect the factors related to patient's perceptions on PPs, the factors responsible for initiating treatment with PPs, reasons for discontinuing treatment with PPs, and their willingness to continue treatment from government health facilities were collected. This data was compared with data collected in 1997 before implementation of the RNTCP.

**Results:** A total of 1000 and 1311 TB patients were registered during 1997 and 2005 respectively. Among them, 203 (20%) and 104 (8%) patients were identified as having been initially diagnosed and started on TB treatment by PPs and subsequently shifted to government health facilities. There were significant changes in reasons for selecting PPs between the two periods: being convenient (47% vs 10%;  $p < 0.001$ ), quality care (41% vs 19%;  $p < 0.001$ ), motivated by others (49% vs 19%;  $p < 0.001$ ), confidentiality (19% vs 9%;  $p < 0.05$ ) and known doctor (6% vs 28%;  $p < 0.001$ ) respectively. Financial problems were the most common reason for discontinuation of treatment in both periods. The use of sputum test for diagnosing TB by PPs was significantly increased after RNTCP implementation.

**Conclusion:** This study suggests that slowly perceptions of patients have changed towards PPs, and RNTCP has begun to gain acceptance amongst patients in terms of convenience, confidentiality and personal care. [*Indian J Tuberc* 2009; 56:185-190]

**Key Words:** Private Providers, Perceptions, Tuberculosis, Private Public Mix, India

**INTRODUCTION**

In the period prior to implementation of the Government of India's Directly Observed Treatment Short course (DOTS) based RNTCP, studies on health care seeking behaviour revealed that patients approached private facilities more frequently than government health facilities for the treatment of acute ailments irrespective of socio-economic class.<sup>1,2</sup> A report from the Tuberculosis Research Centre (TRC), Chennai, India, documented that more than 50% of individuals with chest symptoms approached private health care facilities for initial diagnosis and

treatment of tuberculosis (TB).<sup>3</sup> However it has been observed that patients starting treatment for TB within the private sector frequently switch over to the public sector.<sup>4</sup>

The RNTCP was formally launched in 1997, following a pilot test phase from 1993-96, and by March 2006 the entire country was covered under the programme.<sup>5</sup> RNTCP has implemented many Public-Private Mix (PPM) TB activities throughout the country and has successfully involved 267 Medical, more than 2500 NGOs, 19,000 PPs and over 150 corporate sector health units in the delivery of

1. Tuberculosis Research Centre (ICMR), Chennai

2. World Health Organisation, New Delhi

**Correspondence:** K Jaggarajamma, Medical Social Worker, Tuberculosis Research Centre (ICMR), Mayor Ramanathan Road, Chetput, Chennai 600031; email: jagannatharao2003@yahoo.com

RNTCP Colleges services to patients.<sup>6</sup> Under RNTCP it is the health system's responsibility to ensure complete treatment and cure. The diagnostic and treatment services have been decentralized and patients have easy access to close to their residence.<sup>6</sup> RNTCP has also made a concerted effort to develop partnerships with the private health sector and NGOs in order to widen access to quality TB care provided under the programme. TRC conducted a study before and after implementation of RNTCP to find out the perceptions of TB patients who were initially diagnosed and treated for TB in a private clinic and subsequently shifted to public health facility. During pre RNTCP period the reasons given by the patients for attending private health facilities were accessibility, convenience and good-quality care given by the PPs.<sup>3</sup> After implementation of RNTCP, the perceptions of TB patients towards PPs and their treatment behaviour was unknown. The current study was undertaken to find out whether there has been any change in the perceptions of TB patients initially treated by PPs, and reasons for selecting a PP, discontinuation of treatment with the PP and their treatment shift to a public health facility.

## **MATERIAL AND METHODS**

### **Study area**

This is a comparative study carried out in two time periods in 1997 and 2005 (Pre and Post RNTCP periods). The study covered both rural and urban areas. The rural was conducted in Chengai MGR district and urban was in Chennai city. All government chest clinics at major hospitals in Chennai city, and at the District Tuberculosis Centre (DTC) and the Government hospitals in Chengai MGR district were selected for the study purpose in 1997. Subsequently the rural district was bifurcated and called as Kancheepuram and Tiruvellore districts. After implementation of RNTCP, in 2005 one TB Unit (TU) from each district was selected and two TB units were selected from Chennai city to represent the same area.

### **Study population**

The eligibility criterion for inclusion of TB patients for the study was "patients, who had received their initial TB treatment from PPs and

subsequently switched over to the public health facilities, were selected for interviews, irrespective of the duration of the treatment with PPs". A total of 1,000 and 1,311 all forms of TB patients were screened for inclusion in the study at all the participating centres during June to December of 1997 and 2005 respectively. Of these patients, 203 (20%) and 104 (8%) correspondingly were found eligible for inclusion in the study. These patients were interviewed within two months of starting treatment.

### **Tool for data collection**

Information was obtained from patients using a semi-structured interview schedule prepared on information obtained during Focus Group Discussions (FGDs) in the pre-RNTCP period. The interview schedule included patient's demographic and socio-economic characteristics, and general health seeking behaviours. In addition, information on the type of investigations done by PPs for diagnosis of TB, disclosure of diagnosis to the patients, reasons for discontinuation of treatment with PPs, and patient's willingness to continue their subsequent treatment with a provider implementing RNTCP services were elicited. The same tool was used after implementation of RNTCP in the present study.

### **Data collection**

Trained medical social workers interviewed all patients enrolled into the study after obtaining written informed consent. Patients were informed in the local language or a language that they understood about the purpose of the study and assured of confidentiality of data collected. Interviews were conducted at the respective health facilities.

### **Data management**

After scrutiny, data were computerized and analyzed using the SPSS 13.0. An analysis of the frequency distribution of patient's profile with respect to demographic, socio-economic status, choice of PPs, type of investigations done, reasons for discontinuation of treatment with the PPs, and

willingness to take treatment under PPs were compared with data collected in pre-RNTCP period. The Chi-square test was used to compare the difference in proportions. A p-value <0.05 was considered statistically significant.

## RESULTS

In 1997, 1,000 TB patients were screened and 203 (20%) were found to be eligible for inclusion

in the study. In 2005, the corresponding figures were 1,311 screened and 104 (8%) patients eligible [A significantly lower number in 2005 than in the 1997 patient cohort (8% vs 20%;  $p < 0.001$ )].

### Demographic and socio-economic profile of the study patients

Table-1 presents the demographic and socio-economic characteristics of those TB patients

**Table 1:** Socio-demographic profile of tuberculosis patients treated in pre and post RNTCP periods

	Pre-RNTCP (n=203)		RNTCP (n=104)	
	No	%	No	%
<b>Area:</b> Urban	127	63	69	66
<b>Sex:</b> Male	127	63	54	52
<b>Age:</b> ≤45 years*	163	80	66	63
Literacy *	140	69	87	84
Employed**	147	72	63	61

\*  $P < 0.01$ ; \*\*  $p < 0.05$  level of significant

**Table 2:** Reasons for initiating TB treatment with PP in pre- and post-RNTCP periods

Reasons for choice	Pre-RNTCP (n=203)		RNTCP (n=104)	
	No	%	No	%
Convenience**	95	47	10	10
Accessibility	90	44	43	41
Personal care**	84	41	20	19
Motivated by others**	99	49	20	19
Confidentiality*	38	19	9	9
Dissatisfaction with public sector care	12	6	10	10
Known Doctor**	12	6	29	28
Willing to take TB treatment under public sector care**	30	15	88	85

\*\*  $P < 0.01$ ; \* $p < 0.05$  level of significant

who shifted their treatment from PPs to government health providers in the pre- and post-RNTCP implementation periods. Significant differences were observed between the two periods in relation to age  $\leq 45$  years (80% vs 63%;  $p < 0.05$ ), literacy (69% vs 84%;  $p < 0.001$ ) and employment (72% vs 61%;  $p < 0.05$ ).

### General health seeking behaviour

The number of patients who approached PP initially in Pre and post RNTCP implementation remained same (73%).

### Reasons for selection of PPs for TB treatment

Significant changes were observed in the reasons given by the patients who approached PPs

in the pre-RNTCP and during RNTCP periods. Reasons included were: convenience (47% vs 10%;  $p < 0.001$ ), quality care (41% vs 19%;  $p < 0.001$ ), motivated by others (49% vs 19%;  $p < 0.001$ ), confidentiality (19% vs 9%;  $p < 0.05$ ), and known Doctor (6% vs 28%;  $p < 0.01$ ). In the pre-RNTCP period, only 15% of the patients were willing to take TB treatment under a government health facility, whereas this proportion had significantly ( $p < 0.01$ ) increased to 85% during RNTCP period (Table-2).

### Investigations done for diagnosis of TB by PPs

In both periods, more than 90% of PPs were using chest X-ray and mantoux test as diagnostic tool for TB. However there was 14% increase in use of sputum microscopy (45% vs 59%;  $p < 0.05$ ) and 52% reduction in the use of blood test

**Table 3:** Patients undergone investigations by PPs in pre- and post-RNTCP periods for diagnosis of TB

Investigations	Pre-RNTCP (n=203)		RNTCP (n=104)	
	No	%	No	%
Chest X-ray	192	95	95	91
Sputum Microscopy*	91	45	61	59
Mantoux test	68	33	26	25
Blood test **	141	69	18	17
Others	104	51	55	53

\*\*  $P < 0.01$ ; \*  $p < 0.05$  level of significant

**Table 4:** Reasons for discontinuation of treatment with PPs in pre- and post-RNTCP periods

Reasons	Pre-RNTCP (n=203)		RNTCP (n=104)	
	No	%	No	%
Financial	140	84	65	63
Dissatisfaction	34	20	23	22
Symptoms relieved	13	8	4	4
Side effects of drugs	12	7	7	7
Referred by PPs	76	37	33	32

as a tool for diagnosis of TB (69% vs 17%;  $p < 0.01$ ) post RNTCP implementation (Table 3).

#### **Disclosure of diagnosis to the patients**

In both periods, about 90% of patients were informed about the diagnosis of TB and the duration of treatment by the PPs (96% vs 89%).

#### **Reasons for discontinuation of treatment with PPs**

There was no change in the reasons given by the patients for discontinuing treatment with PPs in both the periods of the study. The main reasons were due to financial problems, referral by PPs to government services and patient dissatisfaction with the care provided by the PPs (Table-4).

### **DISCUSSION**

The present study documented for the first time from India a comparison of reasons for selection of PPs by TB patients and their perceptions on PPs before and after implementation of RNTCP. In both periods, the majority (73%) of the study population stated that they first approached PPs seeking care for any ailments. However in 2005, a significantly lower proportion (8% vs 20%,  $p < 0.001$ ) and number (104 vs 203) of the overall total TB patients were found to have been treated initially by a PP prior to starting TB treatment at a public sector health facility. This could be attributed to on-going RNTCP Public-Private Mix TB activities in the study area.

However, the fact that many patients continue to initiate TB treatment in the private sector is not a surprise and has been well documented by many authors.<sup>3,7</sup> A major finding of the study was that whilst before RNTCP was implemented, 47% of TB patients approached PPs initially for the treatment of TB because of the convenience, only 10% did so after the implementation of RNTCP. Similarly other reasons such as quality care and motivated by others to approach PPs, were also significantly reduced after implementation of RNTCP in the study area. The success of RNTCP in India has been acknowledged worldwide, having initiated nearly 10 million TB patients on free treatment with

quality assured drugs and thereby saving more than 1.8 million additional lives.<sup>6</sup> The study also suggest that RNTCP has been successful in bringing about a gradual change in the perceptions of patients in relation to health seeking from PPs or from facilities provided by RNTCP services. However, patients approaching known doctor have significantly increased in RNTCP period. The report from TRC revealed that the major reasons were proximity to residence and their perception that good-quality care would be available there.<sup>3</sup> This shows the impression on PPs among patients is not changed. This indicates the importance of implementing the Public and Private Mix (PPM) projects in the country.

In addition, after the implementation of RNTCP, a significant reduction (69% to 17%) was seen in the use of blood tests and an increase (45% to 59%) in the use of sputum microscopy as tools by PPs for the diagnosis of TB in chest symptomatics. This change was also seen in an earlier report from TRC on a Rural Public Private Partnership Model where it was found that PPs who had been sensitized on RNTCP referred the majority of TB suspects for sputum microscopy.<sup>8</sup> However in both periods, 90% of the patients still underwent chest radiography. In general, PPs have relied heavily on chest X-rays for TB diagnosis, and the study findings suggest that this practice has not yet changed even after the implementation of RNTCP. An earlier report from India found that three quarters of PPs used chest radiograph for the diagnoses of TB.<sup>9</sup> It appears that there still remains a need to sensitize the PPs on the RNTCP diagnostic algorithm and ensure that they adhere to it.

The main reasons given for discontinuation of TB treatment with PPs were similar in both periods with financial constraints given by more than 60% of patients and more than 30% were referred by PPs themselves. In an earlier paper, we reported that the cost to a TB patient was 6.5 times higher if they were treated by PPs than for those patients treated by government health providers.<sup>10</sup> Similarly a study from Maharashtra also reported that TB patients spent five to six times more in private care.<sup>11</sup> After implementation of RNTCP, a significantly higher proportion of patients who had switched over to

public sector care stated that they were willing to continue their treatment with the public health facility or provider which was providing the public sector RNTCP services (15% vs 85%,  $p < 0.001$ ).

### Limitations of the study

The current study had certain limitations. The respondents for this study were interviewed at varying time intervals after they had discontinued their treatment from the PPs. This might have resulted in a recall bias. The information obtained from the patients was not cross checked /verified with the respective PPs, and we do not know the total cases attending/started on treatment at PPs.

### CONCLUSION

**The study findings clearly show that RNTCP is gradually changing the perceptions of TB patients towards the care provided under the programme at public health facilities and is gaining their acceptance and confidence. However, the private sector continues to provide the largest share of health care services in the country. There is need for sensitization of private providers regarding the diagnostic algorithm for TB as majority of them were still depending on X-ray for diagnosis. The current study revealed that the majority of the patients continue to approach PPs for their health care. Although RNTCP has involved many private providers in providing its services, there is a need to strengthen the partnership with private providers for the delivery of treatment to TB patients.**

### ACKNOWLEDGEMENTS

The authors are grateful for the assistance and cooperation of the State Tuberculosis Officers of the Tamil Nadu State Government, the Joint Director of Health, the Deputy Director Tuberculosis, the Deputy Director Health Services and all medical and paramedical staff, including treatment observers, who participated in this work. The authors also thank the respondents who participated in the interviews.

The study was funded in part by a grant from the United States Agency for International Development provided through the World Health Organization.

### REFERENCES

1. Duggal R, Amir S. Cost of health care: A House holds survey in an Indian District. The Foundation for Research in Community Health, Bombay 1989.
2. National Council of Applied Economic Research (NCAER): Household Survey of Health Care Utilization and Expenditure. NCAER, (Working Paper No. 53), New Delhi, 1992.
3. Sudha G, Nirupa C, Rajasakthivel M, Sivasubramanian S, Sundaram V, Bhatt S, Subramaniam K, Thiruvalluvan E, Mathew R, Renu G, Santha T. Factors influencing the care-seeking behaviour of chest symptomatics: a community-based study involving rural and urban population in Tamil Nadu, South India. *Trop Med Int Health* 2003; **8(4)**: 336-341.
4. Selvam JM, Wares F, Perumal M, Gopi PG, Sudha G, Chandrasekaran V, Santha T. Health-seeking behaviour of new smear-positive TB patients under a DOTS programme in Tamil Nadu, India, 2003. *Int J Tuberc Lung Dis* 2007; **11(2)**: 161-167.
5. Khatri GR, Frieden TR. The status and prospects of tuberculosis control in India. *Int J Tuberc Lung Dis* 2000; **(4)**: 193.
6. Central TB Division. TB India 2009: RNTCP Status Report. Directorate of Health Services, Ministry of Health and Family Welfare, Nirman Bhavan, New Delhi 110 011.
7. Fochsen G, Deshpande K, Diwan V, Mishra A, Diwan VK, Thorson A. Health care seeking among individuals with cough and tuberculosis: a population-based study from rural India. *Int J Tuberc Lung Dis* 2006; **10(9)**: 995-1000.
8. Balasubramanian R, R Rajeswari, Vijayabhaskara RD, Jaggarajamma K, Gopi PG, Chandrasekaran V, Narayanan PR. A rural public-private partnership model in tuberculosis control in south India. *Int J Tuberc Lung Dis* 2006; **10(12)**: 1380-5.
9. Arora VK, R Gupta. Private-public mix: a prioritisation under RNTCP—an Indian perspective. *Indian J Chest Dis Allied Sci* 2004; **46(1)**: 27-37.
10. Rajeswari R, Balasubramanian R, Muniyandi M, Geetharamani S, Theresa X, P Venkatesan. Socio-Economic impact of tuberculosis on patient and family in India. *Int J Tuberc Lung Dis* 1999; **3**: 869-877.
11. Sanjay Juvekar, MW Uplekar, S.N. Morankar, M. Kasare, N. Tilekar, B. Batti, D. Dalai, M. Kamble and A. Deshpande. Behavior profile of TB patients in private clinics. *Indian J Tuberc* 1998; **45**: 95-100.