Short Communication

Assessing the Status of Mandatory Tuberculosis Case Notification among Private Practitioners in Urban Puducherry

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Abstract

Background: In India, tuberculosis (TB) was made a notifiable disease in 2012 and nonnotification was made a punishable offense in March 2018. In 2018, 25% of TB cases notified were from private sector. **Objectives:** The objective of the study is to assess the proportion of private practitioners (PPs) who notified TB cases to the Revised National Tuberculosis Control Programme (RNTCP) and to identify the facilitating factors and barriers to TB case notification, including channels most preferred for notification. **Methodology:** This descriptive cross-sectional study was conducted among PPs in urban Puducherry. PPs were included consecutively, and data were collected using a pretested structured questionnaire. **Results:** Almost 60% (75 of 125) of PPs had dealt with presumptive TB cases in the last 1 year. Only one of 16 PPs who diagnosed and two of four PPs who treated had notified. PPs preferred electronic modes of notification such as e-mail and short messaging service (SMS). Concerns regarding patient confidentiality and delay in collection of notification forms from PPs by RNTCP were the barriers to notification. **Conclusions:** Notification for TB diagnosis was poor as PPs preferred to refer cases to RNTCP rather than notifying. Only four PPs had initiated TB treatment, of whom two PPs (50%) had notified.

Keywords: Barriers, facilitating factors, private sector, referral, revised National Tuberculosis Control Programme

Introduction

Tuberculosis (TB) is one of the leading causes of death. Eight countries account for two-thirds of the global burden of TB,[1,2] and India accounts for almost one-fourth of the global burden of TB with an estimated 2.74 million (1.87–3.77 million) incident cases in 2017.[3] In 2016, a quarter of the incident cases of multidrug-resistant/rifampicin-resistant TB were also reported from India.[2]

In India, over 80% of TB patients initially report to the private health providers.[4] Incorrect diagnosis coupled with irrational and incomplete treatment has led to the emergence of drug-resistant TB cases in the country.[5] Notification provides an opportunity to support the private sector in ensuring adherence to standard TB care.[6]

In this background, the Government of India had declared TB a notifiable disease in 2012. NIKSHAY, a web portal, was also developed by Revised National Tuberculosis Control Programme (RNTCP) to facilitate notification. More recently, in March 2018, a notification by the Ministry of Health and Family Welfare declared nonnotification of TB a punishable offense under sections 269 and 270 of the IPC (45 of 1860), with an aim to increase notification from the private sector. In 2018, Puducherry State Health Authorities carried out an intense drive to register all private practitioners (PPs) for TB notification and to sensitize them regarding the various mechanisms to notify TB cases to RNTCP. Hence, we conducted this study among PPs in urban Puducherry, to assess the proportion currently notifying TB cases to RNTCP. We also assessed the proportion referring cases to RNTCP for diagnosis or/and treatment. The study also attempted to find out the facilitating factors and barriers for TB case notification

Access this article online

Quick Response Code:

Website: www.ijcm.org.in

DOI: 10.4103/ijcm.IJCM_503_20

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How to cite this article: Duggal K, Elsy M, Majella MG, Akkilagunta S, Sahu SK. Assessing the status of mandatory tuberculosis case notification among private practitioners in urban Puducherry. Indian J Community Med 2021;46:701-5.

Received: 18-06-20, **Accepted:** 17-06-21, **Published:** 08-12-21

among PPs, including the channels preferred by them for notification.

Methodology

Study design and study period

A descriptive cross-sectional mixed-method study was carried out between September and November 2018.

Study setting and population

Puducherry is a union territory situated in South India. It has a population of about 1.2 million (census 2011). There are 12 urban Primary health centres (PHCs) in the urban area. Six urban PHCs with relatively more number of PHEs were purposively selected for the study.

Sampling and sample size

All PHEs in the selected areas were mapped, and all the qualified PPs practicing in these PHEs were included.

Inclusion criteria

All qualified PPs, both Allopathic and Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy (AYUSH), practicing in selected PHEs were included.

PPs who had dealt with confirmed TB cases in the last 1 year were considered eligible to notify.

Study procedure

After getting approval from the institute ethics committee, mapping of all PHEs in the study area was done. All the PPs practicing in these PHEs were contacted, and written consent was obtained. A pretested semi-structured questionnaire was used for data collection. The questionnaire included sociodemographic details, clinical practice-related information, RNTCP sensitization status, questions related to a number of presumptive TB and TB cases seen in the last 1 year, TB diagnostic, treatment, and referral practices, and notification practices. Facilitating factors and barriers to notification were also assessed using open-ended questions. Participants were assured of confidentiality of the information provided.

Statistical analysis

Data entry was done using EpiData Manager (v. 4.2.0 EpiData Association, Denmark), and analysis was done using EpiData Analysis software (v. 3.2.0 EpiData Association, Denmark).

PPs notifying and PPs referring cases to RNTCP for diagnosis/treatment was reported as percentages. Cases referred for diagnosis/treatment to RNTCP and notified among those diagnosed/treated were summarized as frequency and proportions.

Ethical approval

Approval of the institute ethics committee was obtained before data collection.

Results

One hundred and ninety-four PHEs were mapped in the study area in which 169 PPs were practicing. Many practitioners were practicing in multiple establishments.

Out of 169 PPs approached, 125 (74%) consented and were included in the study. Majority of the PPs were male (72%) and aged between 30 and 39 years (38%). Most of the PPs had postgraduate qualifications (73%) and practiced in single practitioner clinics (81%). Sixteen (12.8%) of these were AYUSH practitioners, of which four practitioners had dealt with presumptive TB patients in the last 1 year.

The proportion of PPs sensitized regarding RNTCP and TB notification were 86.4% and 65.6%, respectively. The PPs who worked in both public and private sectors were 42.4%; they were better sensitized to RNTCP and TB notification compared to those who worked only in private.

The status of diagnosis, treatment, referral, and notification of TB patients among PPs is shown in Figure 1. About 60% of the PPs ($n = 75$) had dealt with presumptive TB/TB patients in the last 1 year, of whom 96% (72) had dealt with presumptive TB patients. Most PPs ($n = 72$, 68%) referred presumptive TB cases to RNTCP for diagnosis (68%). All four AYUSH practitioners who had dealt with presumptive TB patients had referred them to other PPs (3) or RNTCP (1) for diagnosis. Only 29% (21) of PPs were involved in diagnosis of TB patients on their own, of which 16 PPs (76.2%) had diagnosed at least a single case of TB in the last 1 year. Among these 16 PPs who diagnosed TB cases, 14 (87.5%) had referred TB cases to RNTCP for treatment initiation. Only one of these 16 PPs who diagnosed had notified, whereas two of four PPs who treated had notified.

Figure 2 shows the proportion of presumptive TB cases referred for diagnosis, diagnosed, and notified to RNTCP by PPs. A total of 823 presumptive TB patients were consulted by the PPs interviewed. Of the total presumptive TB patients, majority ($n = 690$) of the cases were referred for diagnosis to RNTCP (95%). A considerable proportion of presumptive TB cases ($n = 133$, 16%) were evaluated for diagnosis by the PPs themselves. It was reported that 44% ($n = 59$) of these patients were lost to follow-up. Among the cases diagnosed ($n = 74$), the proportions diagnosed with pulmonary TB, extrapulmonary TB, and negative for TB were 49%, 45%, and 7%, respectively. The proportion of TB patients notified to RNTCP out of total diagnosed positive ($n = 69$) were 3%.

During the reference period of 1 year, a total of 131 confirmed TB cases were dealt by the PPs, and among them, 95 (72.5%) were referred to RNTCP for treatment initiation. Among the TB patients treated by PPs themselves ($n = 22$), 6 (27%) were notified to RNTCP.

The modalities most commonly used by PPs for TB case notification were electronic modes of notification such as SMS and e-mail. The modalities suggested by PPs for notification were mobile-based app (86.6%), SMS (61.3%), online web portal (52%), or by hand (46.6%).

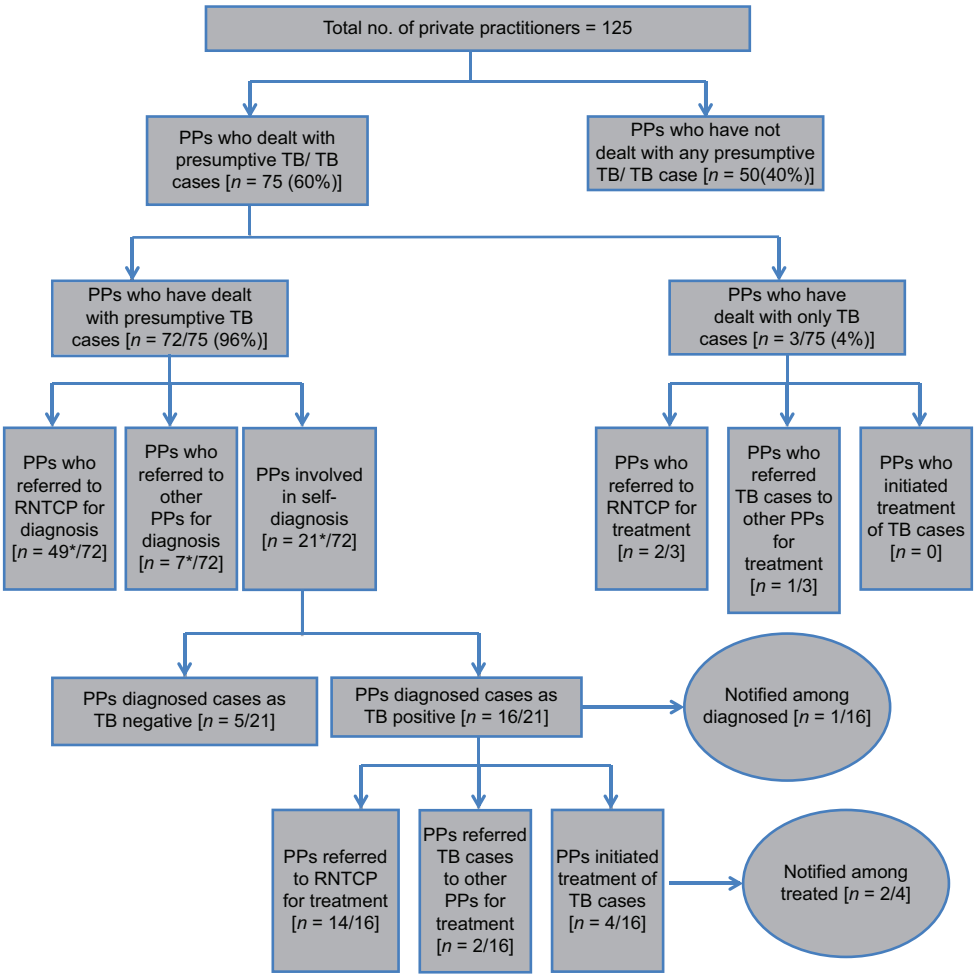

Figure 1: Flowchart showing the status of notification, referral, diagnosis, and treatment of tuberculosis among private practitioners ($n = 125$)

The facilitating factors and barriers to TB case notification as perceived by PPs are presented in Table 1. Facilitating factors for notification were availability of multiple electronic modes of notification and assistance in contact tracing, and the barriers were their busy schedule, fear of losing patients' trust, and irregular collection of notification forms by RNTCP.

Discussion

This is one of the first few studies to assess the status of diagnosis, treatment, and notification of TB patients among PPs in Puducherry. Our results showed that three out of five PPs had dealt with presumptive TB cases; however, majority of the PPs preferred to refer presumptive TB cases to RNTCP for diagnosis; this resulted in a low proportion of PPs being eligible to notify.

In 2017, a total number of TB cases notified from the private sector in India were 3.8 lakhs and from Puducherry were 3 lakhs.[3] In 2018, there was a 40% increase in the number of TB cases notified from the private sector in India, of which 23 were from Puducherry.[1,7] As per the present study, eight TB cases were notified to RNTCP in 2018, from six PHC areas (of total 27 PHCs) in Puducherry. This improvement could be because of an intensive drive by the state health authorities in 2018 to register all PPs for TB notification and sensitize them regarding the various mechanisms to notify TB cases to RNTCP.

Only one of 16 eligible PPs had notified for TB diagnosis and two of four eligible PPs for treatment had notified despite being sensitized. This low rate of notification among those sensitized appears to be in line with the findings of other studies from India.[8-10]

In our study, we found that the proportion of PPs referring cases to RNTCP for diagnosis were 68% and for treatment were 87%. This high rate of referral could be attributed to the sensitization drive undertaken by RNTCP. Studies have shown that PPs sensitized by RNTCP were more likely to refer presumptive TB cases to government facilities.[11-13] Central governments gazette notification of 2018, making nonnotification of TB cases, a punishable offense, could have resulted in more referral too. High referral could also be because of other known factors such as low socioeconomic status of patients, availability of free treatment in government facilities, and accessibility as were reported in a study from Chennai, South India.[5]

The barriers to notification as reported by PPs in our study

Table 1: Facilitating factors and barriers to tuberculosis case notification as perceived by private practitioners from selected urban primary health center areas in Puducherry (*n*=125)

Themes	Facilitating factors	*n* (%)*
Practitioner related	Easy through SMS/missed call	48 (38.4)
	Availability of notification through web-portal, as it required less paperwork	35 (28)
Patient related	Helps in tracking the patient	19 (15.2)
	Financial benefits available for the patient	12 (9.6)
Program (RNTCP) related	Easy accessibility to state TB officials	4 (3.2)
Themes	**Barriers to notification**	***n* (%)***
Practitioner related	Difficult and time consuming to collect patient details for notification	44 (35.2)
	Inconvenient to maintain a register to ensure notification	38 (30.4)
	No time to send SMS	30 (24)
	Filling forms and e-mailing is cumbersome	23 (18.4)
	Lack of awareness regarding recent RNTCP guidelines	6 (4.8)
Patient related	Patient confidentiality	18 (14.4)
	Patients unwilling to be notify ed or share details for notification	14 (11.2)
	Patients are not motivated enough to be notified as they are unaware of the benefits of notification	5 (4)
Program (RNTCP) related	No follow up from RNTCP after sensitization	18 (14.4)
	No mechanism is present to collect notification forms at regular intervals from PPs	17 (13.6)
	No feedback regarding patients referred to RNTCP	14 (11.2)

*Most PPs responded to only select questions, more than one response per individual. TB: Tuberculosis, PPs: Private practitioners, RNTCP: Revised national tuberculosis control programme

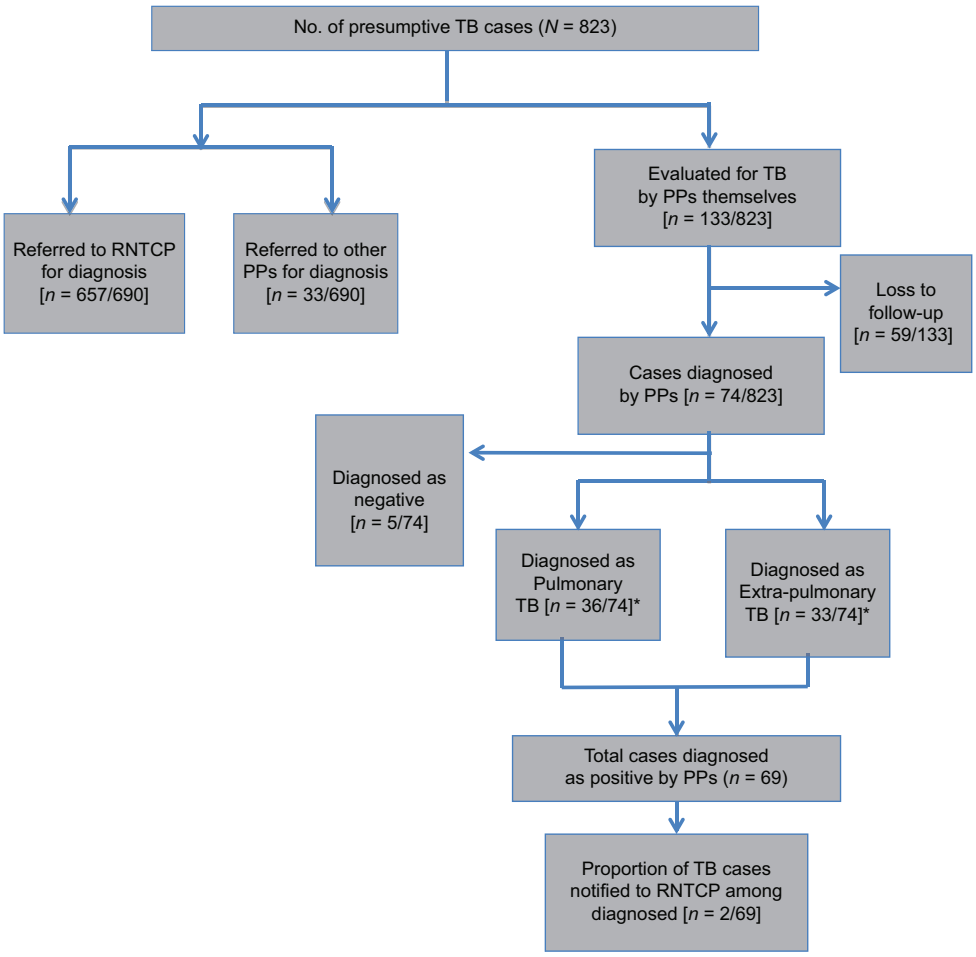

Figure 2: Flowchart showing the proportion of presumptive tuberculosis cases referred for diagnosis, diagnosed, and notified to Revised National Tuberculosis Control Programme, by private practitioners (*n* = 823)

were difficulties in gathering patients' details, inconvenience of maintaining a register, and lack of time. Concerns related to patient confidentiality, especially due to the stigma attached to TB, were also voiced. Similar findings have been reported in other studies from Kerala, Chennai, and Delhi.[8,10,14] A study by Nair *et al*. mentioned that a declaration by the Government of Kerala assuring PPs of patient confidentiality was a major step that helped to overcome this barrier.[15]

Some PPs also stated the facilitating factors prevailing in the program for notification. The important ones among those were the availability of multiple electronic modes of notification such as e-mail and SMS. Previous studies conducted in other parts of South India (Kerala and Chennai) have reported similar results.[8,10] A mobile-based application for notification was suggested as a convenient method of notification by most PPs; however, they were not aware of the existence of such an app. Hence, awareness needs to be generated among PPs regarding the existing NIKSHAY app.

Strengths and limitations of the study

In this study, the entire spectrum of PPs including Allopathic and AYUSH practitioners were involved. All practitioners included in the study were interviewed face-to-face. Urban PHC areas where more PPs practiced were included. However, the limitations of the present study are that there was a nonresponse rate of 30%. Reporting bias, social desirability bias, and recall biases, none of the PPs maintained any separate register for TB cases.

Conclusions

Proportion of PPs involved in notification "for TB diagnosis" was less (one of 16 PPs). Majority of presumptive TB cases (95%) dealt by PPs were referred to RNTCP for diagnosis. Only a few PPs were eligible for doing notification "for TB treatment" as not many were initiating TB treatment on their own. There was a need to further sensitize PPs regarding the NIKSHAY app for notification. Digitalization of TB notification process and follow-up trainings on TB notification may further improve notification rates.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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