

Assessment of the Socio-Demographic Profile, Knowledge, and Training Status of Healthcare Personnel Associated with RNTCP in Relation to Loss to Follow-Up

Ajay Krishna¹, Aishwarya Krishna², Shalini³, Ankit Krishna⁴

¹Associate Professor & H.O.D, Department of Community Medicine (PSM), Patna Medical College, Bihar, India

²PG-3, Department of Pathology, Patna Medical College, Bihar, India

³Senior Lecturer, Department of Pedodontics and Preventive Dentistry, Teerthanker Mahaveer Dental College and Research Centre, Moradabad, Uttar Pradesh, India

⁴PG Resident, Department of Periodontology, Armed Forces Medical College, Pune, Maharashtra, India

Received: 25-09-2023 / Revised: 23-10-2023 / Accepted: 18-11-2023

Corresponding Author: Ajay Krishna

Conflict of interest: Nil

Abstract:

Introduction: The pivotal role in the management of tuberculosis is undertaken by health workers affiliated with the NTEP or RNTCP. The efficacy or inefficacy of treatment is contingent upon the comprehension, disposition, and conduct pertaining to tuberculosis among healthcare practitioners. Consequently, the current investigation was designed to evaluate the socio-demographic characteristics, level of knowledge, and training status of Health Care Workers affiliated with the NTEP/RNTCP in relation to instances of loss to follow-up.

Methodology: A total of four hospitals, consisting of two urban and two rural facilities, were selected using a random sampling method. All healthcare professionals associated with the RNTCP, including STS, STLS, LT, TBHV, and DOTS providers from the designated T.U.s, DMCs, and DOTS centers, were interviewed using a pre-tested semi-structured interview schedule.

Results: Healthcare workers were mostly 30-41-year-old men with graduate degrees. These people understood TB' genesis and transmission processes well. The majority of people have received occupational-specific training. Most participants (71.41%) said pharmacological side effects contributed to TB treatment follow-up loss. A considerable majority (57.62%) stated that a feeling of wellbeing had a role, and a smaller percentage (33.48%) ascribed the loss to follow-up to an alcoholic habit.

Conclusions: 26% of healthcare workers didn't know what "loss to follow-up" meant. The majority of people believed that treatment side effects, improved health, and alcohol usage were the main causes of tuberculosis follow-up loss. Thus, educational measures to reduce follow-up loss and increase female healthcare professional participation are needed.

Keywords: Tuberculosis, Loss to Follow-up, knowledge, Health Care Workers.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

India accounts for approximately 25% of the total tuberculosis (TB) cases worldwide, signifying a significant burden of the disease within its borders. In line with the global effort to combat TB, the End TB program in India has set ambitious targets to achieve substantial improvements in treatment initiation and cure rates by the year 2025. In the Indian context, the rate of loss to follow-up among individuals diagnosed with new sputum smear-positive cases stands at 4%. This presents a potential hazard of heightened transmission of infection within the community [1]. The etiological factors associated with defaulting from the program encompass non-adherence to established guidelines,

insufficient training of personnel, and suboptimal supervision.

Multiple studies have elucidated diverse etiologies contributing to non-compliance, including the apprehension of acquiring tuberculosis among liaison health personnel and the recalcitrant conduct exhibited by hospital personnel [2]. The factors that exhibit independent associations with defaulting from treatment encompass illiteracy, preexisting commitments during the course of treatment, limited knowledge regarding tuberculosis, suboptimal patient-provider interaction, inadequate support from healthcare personnel, failure to adhere to prescribed medication regimen, drug-related

adverse effects, and dissatisfaction with healthcare services.

Healthcare personnel within the National Tuberculosis Elimination Program (NTEP) assume a pivotal role in the management of TB [3]. The efficacy of treatment is contingent upon the patient's level of knowledge, attitude, and adherence to recommended practices pertaining to TB. Insufficient knowledge among healthcare providers may result in suboptimal counseling practices. Multiple studies have demonstrated an elevated susceptibility to TB infection among healthcare personnel attributable to suboptimal adherence to infection control protocols [4]. In order to enhance infection control and optimize treatment outcomes, it is imperative for healthcare professionals to possess a comprehensive understanding, a positive mindset, and a diligent approach pertaining to TB.

The objective of this study is to evaluate the socio-demographic characteristics, level of knowledge, and training status of healthcare professionals affiliated with the NTEP or RNTCP in relation to loss to follow-up.

Methodology

Two out of the three urban Tubercular Units (T.U.), namely 'Gardanibagh Hospital, Patna and Guru Govind Singh Hospital, Patna', were selected in a random manner. In a similar fashion, two out of the four rural T.U. were selected at random, specifically the 'Fatuha P.H.C and Sampatchak P.H.C'. The data collection and interviews were conducted over a span of 02 months, commencing in '1st August 2023 to 1st October 2023'.

Interviews were conducted with healthcare personnel affiliated with the National Tuberculosis Elimination Program (NTEP), encompassing Senior Tuberculosis Laboratory Supervisors (STLS), Senior Tuberculosis Supervisors (STS), Directly Observed Treatment Short Course (DOTS), and Lab Technicians (LT), Tuberculosis Health Visitors (TBHV), providers from the designated Tubercular Units, Designated Microscopy Centres (DMCs), and DOTS centres. The present study employed a pre-tested semi-structured interview questionnaire for data collection.

The acquired data underwent coding and subsequent entry into Microsoft Office Excel worksheets. Subsequently, a trial version of SPSS software was employed to conduct statistical analysis.

Result and Discussion

Table 1 presents the pertinent attributes of the healthcare professionals who were interviewed. The study findings revealed that a significant proportion (40.4%) of individuals were observed to be within the age range of 30-41 years. Furthermore, the male population accounted for a substantial majority (78.3%), while 43.82% of participants were found to belong to various other caste groups. Approximately 61.1% of the healthcare personnel who were subjected to interviews had attained educational qualifications up to the level of graduation. The predominant proportion of individuals fulfilling the role of DOTS providers amounted to 50.7%. This category encompasses both ASHA workers and physicians specializing in alternative medicine, constituting 19.7% of the total.

Table 1: Health personnel's sociodemographic profile in relation to RNTCP

Variable	Distribution	No.	%
Age	21-30	9	34.5
	31-40	13	40.4
	40-50	06	23.1
Sex	Male	24	78.3
	Female	05	19.7
Caste	SC/ST	10	30.04
	OBC	06	23.14
	Others	14	43.82
Education	High school	05	14.8
	Intermediate	04	18.2
	Graduate	17	61.1
	Above graduate	03	7.9
Occupation	Dots provider	16	50.7
	STLS	03	7.9
	STS	04	11.35
	LT	05	12.8
	TBHV	04	16.2

In a study conducted by Afzalul Haque *et al.*, [5] it was observed that the predominant gender among DOTS providers was male, accounting for 82.7% of the participants. Conversely, a minority of females,

comprising 17.3% of the sample, were represented in this role. The predominant DOTS providers were local physicians, accounting for 31% of the cases. They were closely followed by community leaders,

constituting 24.1% of the providers, and paramedical workers, who accounted for 17.1% of the cases. It is noteworthy that none of the DOTS providers possessed the credentials of allopathic physicians. The study conducted by Mohanarani Suhadev *et al.* [6] revealed comparable observations, wherein the male Directly Observed Treatment, Short-course (DOTS) providers surpassed the number of female providers. Additionally, it was noted that 44% of these providers were aged 40 years or older.

In a study conducted by Ajith Kumar G *et al.*, [7] it was observed that approximately 70% of healthcare workers fell within the age range of 20-30 years. Furthermore, it was noted that 85% of these individuals were of the female gender. The majority of individuals included in the sample were nurses (69%) and pharmacists (29%).

In relation to knowledge, the healthcare workers who were interviewed exhibited a notable degree of comprehension pertaining to the causative agent, modes of transmission of Tuberculosis, DOTS, RNTCP, and retrieval methods, with a complete knowledge acquisition rate of 100%. Nevertheless, a notable proportion of healthcare personnel, specifically 19.7%, exhibited a lack of familiarity with the accurate delineation of a defaulter, commonly referred to as loss to follow-up. Approximately 78.3% of the participants demonstrated familiarity with the established criteria for suspecting multidrug-resistant tuberculosis (MDR-TB), while 71.4% possessed adequate understanding regarding MDR-TB. The level of understanding regarding the necessity of an HIV test among individuals participating in the TB study and those seeking services at ICTC was found to be 92.1% and 85.2%, respectively. Approximately 81.8% of healthcare personnel reported occasional susceptibility to infection, whereas 16.2% acknowledged a perpetual vulnerability to acquiring TB from patients.

In a study conducted by Jain *et al.*, [8] it was observed that a substantial proportion of DOTS providers exhibited commendable knowledge regarding TB. Notably, this knowledge was found to be significantly more prevalent among male participants, respondents below the age of 30, and DOTS providers employed within the healthcare sector. In a study conducted by Sachin B. Palve *et al.*, [9] it was observed that a mere 5% of healthcare professionals were able to accurately state the complete expansion of DOTS under the RNTCP. Furthermore, only 14% of the participants demonstrated knowledge regarding the primary diagnostic method for suspected tuberculosis cases, which is sputum examination.

Regarding the aspect of training, a majority of healthcare personnel (54.2%) had undergone a

training program lasting for a duration of 1-2 days. A significant proportion (57.6%) of individuals underwent training at said institute.

The study conducted by Amanpreet Kaur *et al.* [10] underscored the importance of training for DOT Providers. The findings revealed a statistically significant disparity in treatment schedule knowledge between DOT Providers who received training and those who did not. Continuous monitoring and supervision by proficient personnel in Tuberculosis Units were deemed imperative. In a study conducted by Ajith Kumar G *et al.*, [11] it was observed that a significant proportion of healthcare professionals had received regular training in TB management and TB infection control (87%). Furthermore, a substantial majority of these professionals consistently adhered to the RNTCP guidelines for reference (95%). Furthermore, it is noteworthy that a significant proportion, exceeding 80%, of the participants exhibited commendable levels of knowledge, attitude, and adherence to recommended practices pertaining to TB.

Conclusion

The predominant demographic of healthcare personnel consisted of individuals of the male gender who had successfully attained educational qualifications up to the level of graduation. The individual demonstrated a comprehensive comprehension of the etiological agent, modalities of transmission, DOTS, RNTCP, and retrieval techniques pertaining to tuberculosis. Nevertheless, a notable proportion of approximately 20.7% exhibited an inadequate comprehension pertaining to the precise elucidation of "loss to follow-up."

The healthcare personnel underwent their training at said institute, situated within the identical district. The duration of training exhibited variability among healthcare professionals, with a tendency for singular provision, lacking periodic repetition.

The prevailing consensus among healthcare professionals suggests that adverse drug reactions, subsequent feelings of improved health, and alcohol intake are the primary factors contributing to patient attrition in tuberculosis treatment. In order to effectively tackle this matter, it is imperative to intensify endeavors aimed at mitigating the adverse effects associated with anti-tubercular medications. There exists a compelling imperative to enhance educational endeavors aimed at averting patient attrition, with a particular emphasis on the inclusion of a greater number of female healthcare professionals in this endeavor.

References

1. Johansson E, Diwan VK. Staff and patients attitudes to TB and Compliance with treatment. Tubercle and Lung disease; 77:17-20

2. VanDerWerf TS, Dade GK, Vander Mark TW. Patient compliance with tuberculosis treatment in Ghana: factors influencing adherence to therapy in a rural service programme. *Tubercle* 1991;72(4):239-320.
3. Sima BT, Belachew T, Abebe F. Health care providers' knowledge, attitude and perceived stigma regarding tuberculosis in a pastoralist community in Ethiopia: a cross-sectional study. *BMC health services research*, 2019, 19(1); 19. <https://doi.org/10.1186/s12913-018-3815-1>.
4. Joshi R, Reingold AL, Menzies, D, Pai M. Tuberculosis among health-care workers in low- and middle-income countries: a systematic review. *PLoS medicine*, 2006, 3(12), e494. doi.org/10.1371/journal.pmed.0030494.
5. Haque Mohd, Kumar Dharendra, Vyas Shaili. A study on socio- demographic profile and feasibility of DOTS provider registered under RNTCP in Varanasi district Uttar Pradesh. *Indian Journal of Community Health*; 2014, 26, 107-110.
6. Mohanarani Suhadev, Soumya Swaminathan, S Rajasekaran, Beena E. Thomas¹, N. Arunkumar, M. Muniyandi and D. Meenalochani. Feasibility of Community Dot Providers for Tuberculosis Treatment in HIV infected individuals - A Pilot Study, *Indian J Tuberculosis* 2005; 52:179-183.
7. Ajith Kumar G, & Saranya P. A cross sectional study on knowledge, attitude and practice towards tuberculosis among health care workers. *International Journal of Research in Pharmaceutical Sciences*; 2019, 10(4), 2632-2646. <https://doi.org/10.26452/ijrps.v10i4.1521>.
8. Jain M, Chakole SV, Pawaiya AS, Mehta SC. Knowledge, Attitude and Practice of DOTS Provider Under RNTCP in Ujjain, Madhya Pradesh. *Natl J Community Med* 2012; 3(4): 670-4.
9. Palve Sachin B, Parkhad Suchitra B, Phalke Vaishali D, Phalke Deepak B, N Bayapa Reddy. Knowledge, Attitude and Practice about Tuberculosis (TB) and Revised National TB Control Programme (RNTCP) Among Rural Based Non-allopathic Private Practitioners. *International Journal of Research in Health Sciences*, 2015; 3, 2, 241.
10. Kaur A, Balgir RS, Kaur P, Gupta V. Knowledge and Attitude of DOTS Providers in Tuberculosis Unit of Patiala. *Online J Health Allied Scs.* 2012; 11(2):3. Available at URL: <http://www.ojhas.org/issue42/2012-2-3.htm>.
11. Sophia VVH, Balasangameswara PS, Jagannatha VN, Saroja, Kumar P. Defaults among tuberculosis patients treated under DOTS in Bangalore city: A search for solution. *Ind J Tub* 2003; 50:185.