

# Knowledge and Mindset of Resident Doctors towards Tuberculosis Patients: An Observational Study

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## ABSTRACT

**Introduction:** A major source of morbidity and mortality in India, tuberculosis (TB) is an infectious bacterial illness brought on by the mycobacterium TB. To control and eradicate the illness, resident doctors must have the appropriate knowledge and attitude. **Aim:** The aim of the study is to assess the knowledge and mindset of resident doctors toward TB. **Materials and Methods:** The research involved 100 resident doctors. To evaluate their attitude and knowledge, a questionnaire survey was conducted. **Results:** A 22 was the mean knowledge score. Residents in medicine with experience treating TB and training in the disease have higher understanding in clinical areas. Just 40% of resident physicians wanted to assist TB patients.

**Key words:** Doctors, knowledge, mindset, resident, tuberculosis

## INTRODUCTION

Tuberculosis (TB) is a common infectious disease caused by *Mycobacterium tuberculosis*. In 2021, an estimated 10.6 million people fell ill with TB worldwide.<sup>[1]</sup> According to the World Health Report 2021, it not only increases morbidity but also contributes to an expected 1.38 million HIV-negative patient deaths and 187,000 HIV-positive patient deaths.<sup>[2]</sup> Before the coronavirus (COVID-19) pandemic, TB was the leading cause of mortality, ranking above HIV/AIDS as indicated by the

World Health Organization (WHO) Global TB Report 2021.<sup>[2]</sup> Despite the brief decline in TB notifications observed around the months corresponding to India's two major COVID-19 waves, the National Tuberculosis Elimination Programme (NTEP) reclaimed these numbers. With a record-breaking notification of 24.2 lakh cases in 2022 up 13% from 2021, this year is significant for India's TB surveillance efforts. This amounts to an estimated case notification rate of 172 cases per lakh people.<sup>[3]</sup>

The stigmatization of TB is caused by the utilization of isolation wards by the majority of hospitals and the fact that some medical professionals use masks when treating TB patients. Health-care providers and community members' stigmatizing attitudes and behaviors toward people with TB have been attributed mostly to fear of infection. An essential part of the stigmatization of TB patients, which is later adopted by society, is played by health-care professionals.<sup>[4]</sup>

Resident doctors are medical graduates who have registered for post-graduation courses at medical

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colleges attached to a major hospital and they play an important role in the diagnosis and management of patients. They are key providers of diagnosis and treatment to TB patients, particularly the sickest TB patients who need hospitalization in a tertiary health care center. Many postgraduate residents are involved in the management of TB as TB affects almost all systems. Hence, thorough knowledge and proper mindset of these doctors toward TB are necessary. In this study, we used a questionnaire survey to evaluate resident doctors' attitudes and understanding about TB patients and their illness.

## MATERIALS AND METHODS

Observational research was conducted cross-sectionally at a tertiary care hospital in urban city. All resident physicians who agreed to take part in the study were enrolled. An online questionnaire used for the qualitative study was self-administered. The questionnaire was carefully constructed, adjusted, and worded using examples from numerous studies. 32 questions made up the questionnaire. The thirty questions were included in the knowledge assessment, with a 30-point maximum. The attitudes toward patients with TB were evaluated by questions 31 and 32. The questionnaire was completed by 100 resident doctors and was used for evaluation. An informed consent was taken from each participant.

We employed descriptive analysis, and the results were shown as a percentage and a mean. Tables and bar diagrams were used to represent the results. Fisher's test was used to compare categorical variables, and a p value of 0.05 was deemed significant.

## RESULTS

In the study, 100 resident doctors were included. 55 of the 100 participants were men and 45 were women [Figure 1]. 34 resident doctors in their 1<sup>st</sup> year, 42 in their second, 17 in their third, and 7 were senior residents [Figure 2]. 56% had treated more than 10 TB patients, and 32% had participated in or attended a training program for the disease.

The overall mean knowledge score was 22. It was observed that mean knowledge score was more in females (23.5) than in males (21) but the difference was not statistically significant. Furthermore, the years of experience were not statistically significant. However, the knowledge of SRs was more as compared to JRs [Table 1].

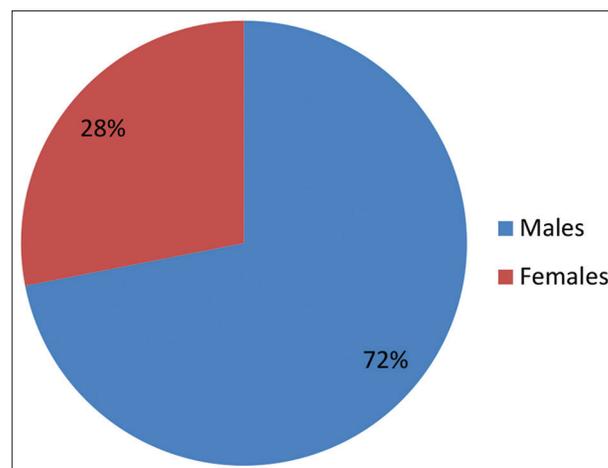


Figure 1: Gender distribution

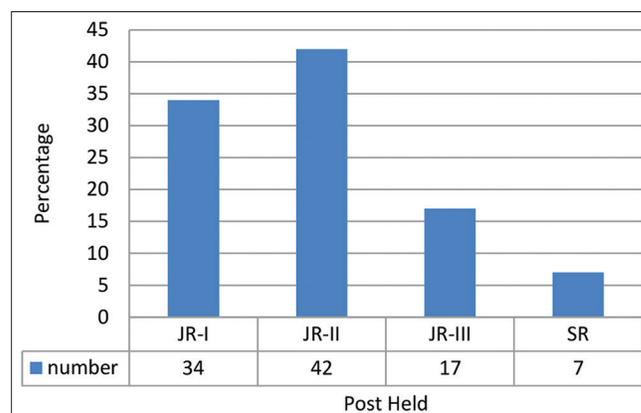


Figure 2: Distribution of participants according to post

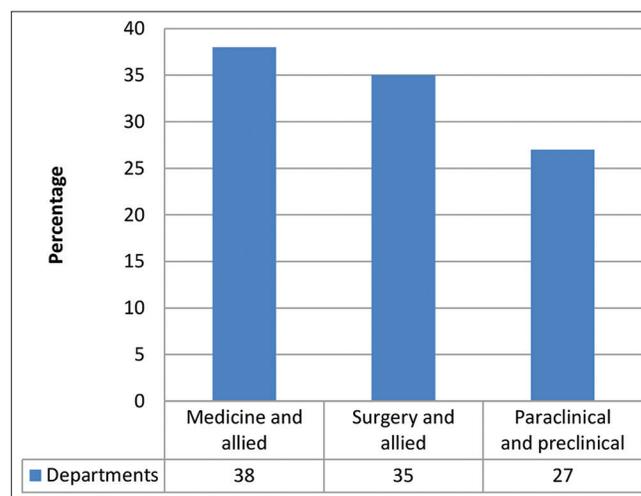


Figure 3: Distribution according to departments

Residents who had treated more than 10 TB patients had mean knowledge score of 26 as compared to

**Table 1:** Knowledge of TB

Variable	n (%)	Mean knowledge score	Statistical significance
Overall	100	22	
Gender			
Male	55	21	No
Female	45	23.5	
Years of experience			
1 <sup>st</sup>	34	19	No
2 <sup>nd</sup>	42	21.4	
3 <sup>rd</sup>	17	22.6	
SR	7	24	
Number of TB patients seen			
<10	44	17	Yes
>10	56	26	
Undergone TB training			
Yes	32	27	Yes
No	68	20	
Departments			
Medicine and allied	38	29.2	Yes
Surgery and allied	35	23	
Paraclinical and preclinical	27	20	

TB: Tuberculosis

others of 21 and difference was statistically significant. Similarly, statistically significant score was observed among those who had undergone TB training of minimum 1 day.

Residents from medicine and allied subjects had a mean score of 29, surgery and allied had a mean score of 23, and pre/paraclinical had score of 20 [Figure 3]. The difference in mean knowledge score was statistically significant [Table 1].

The mindset of resident doctors toward TB patients varied vastly. Only 40% of resident doctors desired to help TB patients, 31 did feel compassion but avoided TB patient and 12% did not care about TB patients. 27% resident doctors had fear of contacting infection if involved in the diagnosis and management of TB patients [Table 2].

In our study, it was observed that those doctors who worked in medicine, surgery, and allied subjects and involved in the management of TB patients had more desire to help TB patients. Preclinical and paraclinical resident doctors perhaps were more scared of acquiring TB infection and did not care about TB patients.

32% resident doctors had undergone TB training or attended TB conference of minimum 1 day [Table 3]. It was observed that those who underwent training had positive mindset toward TB patients than those who did not undergo training or attended conference.

**Table 2:** Mindset of resident doctors toward TB patients

Feeling about patients with TB disease	n
Desire to help TB patients	40
Feel compassion but tend to avoid managing TB patients	31
Fear about contacting TB infection	27
Do not care about TB patients	12
Total	100

TB: Tuberculosis

**Table 3:** Mindset of resident doctors who underwent TB training toward TB patients

Feeling about patients with TB disease	Undergone TB training (n = 32) (%)	No TB training (n = 68) (%)
Desire to help TB patients	50	35.29
Feel compassion but tend to avoid managing TB patients	37.5	26.47
Fear about contacting TB infection	6.25	20.58
Do not care about TB patients	6.25	17.64

TB: Tuberculosis

## DISCUSSION

TB is a major public health problem in India and worldwide. TB cases are increasing worldwide after HIV epidemic and development of multidrug resistance TB. Proper knowledge about the disease, microbiology, symptomatology, laboratory diagnosis, and treatment are essential for every medical graduate if we intend to achieve the NTEP plan to end TB. The World Health Organization recommends that all medical institutes provide every graduate with the knowledge, skills, and attitudes that are essential for diagnosis and management of TB patients.<sup>[5]</sup> A cordial relationship between patients and health staff has been shown to be the main motivating factor for the completion of TB treatment.<sup>[6]</sup>

Increasing the knowledge of TB symptomatology, diagnosis, treatment, and prevention, and also; improving the attitude is one way of protecting the student. Studies have emphasized the need for education and implementation of infection control measures to safeguard medical students from TB.<sup>[7,8]</sup> Medical students still need continuing educational programs regarding treatment and control of TB. Moreover, knowledge about TB will also help them to take proper precaution during patient care.<sup>[9]</sup>

In our study, we observed that resident doctors from clinical departments cared about TB patients and

wanted to help them. Resident doctors from pre and paraclinical subjects had more fear in acquiring TB infection. This interprets that the mindset runs in the department and is acquired from the senior faculty members. We could not get any reference in similar study; however, we feel that proper training should be provided to those fields also who do not involve in the management of TB.

Resident doctors who had prior TB training were more likely to have more knowledge and positive mindset toward TB patients. However, percentage of resident doctors in our study who attended training was only 32%. In a prior study, training workshops in TB control were demonstrated to be effective for the promotion of knowledge and elimination of stigmatization in first-line caregivers.<sup>[10]</sup>

There was a positive association between having done a TB training in the past 5 years and the knowledge score. In a study from Rome, where all students had done a TB training, there was an association between the reported taking of the test and knowledge of TB. Other studies have also reported an association between knowledge and better-integrated preventive measures.<sup>[11]</sup>

Resident doctors with knowledge of a fellow colleague with TB perceive the risk of acquired TB more and hence feel feared of TB patients and acquiring infection. Studies have reported the risk of acquired TB among health-care workers along with inadequate infection control measures in place. Hence, it is utmost necessary to address the issues regarding the prevention and control of transmission of TB in health-care setup. It is important to ensure occupational safety for health-care workers with a safe working environment and adequate measures for the prevention of TB transmission at workplace. In addition, well-defined strategies to minimize TB-related stigma and discrimination can be utilized to formulate and implement sustainable TB antistigma campaigns.<sup>[12]</sup>

## CONCLUSION

In our country where the burden of TB is high, TB training should start from undergraduate and continue till completion of post-graduation studies as our study showed significant difference in knowledge and mindset of resident doctors who underwent TB training.

Regular surveys should be conducted at hospital level and university level to assess knowledge and

attitude and if found deficient, the entire hospital should undergo training.

## Limitation

This is a single hospital-based study which included resident doctors who gave consent for participation. A more validated study would include more participants, mandatory participation, and inclusion of other health-care professionals such as nurses and laboratory technicians who are also involved in the management of TB.

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