

# Assessment of Knowledge, Attitude and Perception regarding Tuberculosis amongst Medical Students of Government Medical College of North India.

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## Abstract

**Introduction:** Tuberculosis is one of the devious diseases prevalent in India. There has been extensive involvement of government and non-government organizations to detect, cure and control tuberculosis. The RNTCP stands as one of the key health programs in India in terms of volume and nature of resources it receives and provides to beneficiaries. The RNTCP guidelines and clinical aspects of tuberculosis form a key component of medical education curriculum in theory classes as well as ward teaching. Also, as the RNTCP operationalization is Government centric, the medical students government medical college gets the opportunity to observe DOTS center in the hospital teaching sessions. The present study aimed to assess the knowledge regarding tuberculosis among medical students of Government Doon Medical College, Dehradun and to explore the perceived stigma regarding tuberculosis among them.

**Methodology:** This was a cross-sectional study done amongst medical undergraduate students of 1st, 2nd and 3rd year. The data was collected using self-administered structured questionnaire. A total of 106 medical students were recruited in this study from three running batches in college using purposive sampling technique. They were asked about personal details, knowledge (both clinical and programmatic) and perceived stigma if any, regarding tuberculosis. The data collected was entered in SPSS version 23 and analyzed using descriptive statistics.

**Results:** Undergraduate medical students have a good knowledge regarding cause, investigations of tuberculosis; however, 25% of them think that smoking causes tuberculosis. 10% of the participants experience fear or choose to stay away from tuberculosis patients. 40% of the students did not know about number of categories in DOTS regimen.

**Conclusion:** Seminars, presentations on recent guideline changes will help students to update their knowledge regarding tuberculosis. Active discussion and doubt clearance should be done by senior faculty members to remove fear and stigma related to tuberculosis in medical students.

**Key words:** Tuberculosis, Stigma, Undergraduate medical students, Knowledge, DOTS

## Introduction

Tuberculosis is one of the devious diseases prevalent in India [1] and is counted amongst the countries having highest burden of tuberculosis. According to World Health Organisation (WHO) National TB statistics India, 2016 reported an estimated 2.79 million incidence cases of

tuberculosis in India [2]. In India TB bacteria has infected approximately 40% of the population out of which the highest majority are affected by latent Tuberculosis instead of the Tuberculosis as a disease [3]. There has been extensive involvement of government and non-government organizations to detect cure and control tuberculosis [4].

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The National TB program was reviewed in 1992 by three organizations- the Government of India, the World Health Organization (WHO) and Swedish International Development Agency (SIDA). The organizations inferred that overall program was undergoing several shortcomings such as weakness in management, less funding, decreased treatment completion etc. [5]. Thus, in

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1997 the RNTCP (Revised National Tuberculosis Control Program) was launched. The RNTCP stands as one of the key health programs in India in terms of volume and nature of resources it receives and provides to beneficiaries.

There have been several health education campaigns in form of Information Education Communication (IEC) activities throughout the nation regarding symptoms, control and treatment of tuberculosis [6]. **Magnitude of burden of tuberculosis in Uttarakhand**, a state of north India was reported was approximately 257/lac per year and 95 new smear+ve/ Lac per years. Also, an online article reported that 43 cases of tuberculosis are reported every day [7]. Under the goal of RNTCP once the aspired cure rate is attained, the goal remains to cure at least 85% of new smear+ve cases of TB and also detect up to 70% of Tuberculosis [8].

The RNTCP guidelines and clinical aspects of tuberculosis form a key component of medical education curriculum in theory classes as well as ward teaching [9]. Not many studies have been conducted in Uttarakhand regarding tuberculosis. Especially it is rare to find any study to assess the knowledge of medical students. Further, medical students are a linking block in communication pathway of senior doctors and patients [10]. Also, as the RNTCP operationalization is Government centric, the medical students government medical college gets the opportunity to observe DOTS center in the hospital teaching sessions.

A report from the World Health Organization has laid stress over making strong educational techniques and make certain that the graduated medical students should have adequate knowledge, attitude and skills to manage tuberculosis [11]. The studies show that it's crucial for medical doctors to have thorough knowledge regarding tuberculosis and also about its epidemiology, screening and any latent infection caused by this disease [12]. There is lot stigma associated with tuberculosis from the diagnosis to its treatment [13]. Many studies reported that that existing stigma around tuberculosis can be minimized by providing adequate and appropriate knowledge to health care providers and health care workers [14].

The college where this study was conducted has its own DOTS center and it becomes very crucial to understand the knowledge regarding tuberculosis among medical students of Government Doon Medical College, Dehradun. Perceived stigma regarding tuberculosis among medical college student was assessed. Additionally, it was important to know the penetration of core principles of RNTCP and socio-pathology of tuberculosis causation to limit it.

## Objectives

1. To assess the knowledge regarding tuberculosis among medical students of Government Doon Medical College, Dehradun.
2. To assess the perceived stigma regarding tuberculosis among them.

## Methodology

This was a cross-sectional study done among undergraduate medical students of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year. The data was collected using self-administered structured questionnaire. The questionnaire was prepared using literature review [11,14-16] and help of expert. A total of 106 medical students were recruited in this study from three running batches in college through purposive sampling technique. The students who were posted in Community medicine department during the study period were recruited in this study. The students were briefed about the objectives and purpose of the study. Each student was given the questionnaire and asked to mark the responses. Those students who chose to fill and return the questionnaire were considered to be sample of this study. They were asked about personal details, knowledge (both clinical and programmatic) and perceived stigma if any, regarding tuberculosis. Informed verbal consent was obtained from study participants. Participant anonymity was maintained at all level of the study.

The data collected was entered in SPSS version 23 and analyzed using descriptive statistics. The data was presented in proportion and percentages.

## Results

Responses using closed ended structured questionnaire were collected from 106 students, 76 of which were females and 59 among them were from 6<sup>th</sup> semester. (Table 1)

**Table 1:** Educational and gender profile of the study participants

Parameter	Options	No. (%)
Gender	Male	76(71.7)
	Female	30(28.3)
Semester	2 <sup>nd</sup>	2(1.9)
	4 <sup>th</sup>	45(42.5)
	6 <sup>th</sup>	59(55.7)

Almost all participants (except one) knew that tuberculosis is communicable disease and bacteria causes it. 95.3% of the students agreed that tuberculosis is acquired by air and 83% knew that diagnosis of pulmonary tuberculosis is by sputum examination. 60.2% of the participants knew about 2 treatment categories in

DOTS and 82.4% chose streptomycin as second line treatment of tuberculosis. (Table 2)

About one-thirds of students believed that smoking causes tuberculosis. 92.5% of the respondents will go to doctor if they or anyone they know experience symptoms

of tuberculosis. 98.1% agreed that DOTS therapy is the best treatment line for tuberculosis. 6.6% of the students will fear dealing with patients of tuberculosis while 2.8% will chose to stay away, about half will agree to help a patient of tuberculosis. (Table 3)

**Table 2:** Knowledge regarding tuberculosis among under graduate medical students.

Statement related to knowledge of tuberculosis	Options	Response (No.)	Response (%)
Spread of disease N= 106	Communicable	105	99.1
	Non communicable	1	0.9
Source of acquiring tuberculosis N=106	Air	101	95.3
	Food	0	0
	Water	2	1.9
	Physical contact	3	2.8
	Don't know	0	0
Cause of tuberculosis N=105	Bacterial	105	100
	Viral	0	0
	Don't know	0	0
Diagnosis of pulmonary tuberculosis is done by N=106	Tuberculin test	11	10.4
	Chest x ray	6	5.7
	Fever	1	0.9
	Blood test	0	0
	Sputum examination	88	83
How many treatment categories are in DOTS therapy N=104	1	1	1
	2	63	60.2
	3	18	17.3
	4	21	20.2
	5	1	1
First line of treatment of tuberculosis is all except N=102	Ethambutol	7	6.9
	Pyrazinamide	2	2
	Rifampicin	5	4.9
	Isoniazid	4	3.9
	Streptomycin	84	82.4

**Table 3:** Attitude and perception regarding tuberculosis among under graduate medical students.

Statement related to attitude and perception about tuberculosis	Options	Response (No.)	Response (%)
Smoking causes tuberculosis N= 105	Yes	27	25.7
	No	78	74.3
What will you do if you or anyone known to you experience symptoms of tuberculosis N=106	Go to doctor	98	92.5
	Get yourself tested	6	5.7
	Be anxious	0	0
	Be feared	1	0.9
	Be ashamed	1	0.9
In case of tuberculosis which treatment line is best N=105	DOTS therapy	103	98.1
	Ayurvedic treatment	0	0
	Homeopathic treatment	0	0
	Home based treatment	0	0
	Allopathic treatment other than DOTS	2	1.9
How will you feel while dealing with patient of tuberculosis N=106	Fear	7	6.6
	Stay away	3	2.8
	Neutral feeling	26	24.5
	Show compassion	16	15.1
	Agree to help	54	50.9
Have you ever seen a patient of tuberculosis N=104	Yes	92	88.5
	No	12	11.5
Have you heard of MDR and XDR N=106	Yes	88	83
	No	18	17

## Discussion

Tuberculosis has always remained one of the important topics in MBBS curriculum be it physiology, pathology, pharmacology, microbiology, community medicine, pediatrics or medicine. Undergraduate medical students are exposed to knowledge regarding various aspects of tuberculosis since their first academic year. From public health point of view also national tuberculosis programs are one of the oldest and always considerable attention has been given for its prevention and cure. Assessment of knowledge, attitude and perceptions regarding tuberculosis among medical students helps to shape the curriculum and answer the myths prevalent in medicos and general population. This study tried to capture this information. The questions in this study were not marked fully by all participants, thus, the sample size of each question differs. This study surfaced few aspects of myths regarding tuberculosis like smoking causes tuberculosis as marked by 25.7% of medical students. About 10% of the participants will feel fear or choose to stay away from tuberculosis patients. Knowledge regarding tuberculosis was found to be adequate among students however, about 40% of the participants did not know about DOTS categories and 17% never heard of MDR or XDR tuberculosis. The knowledge regarding symptoms and diagnosis of tuberculosis was better than study by Revanthi R among medical interns[1]. The mean percentage of correct answers regarding knowledge of tuberculosis in this study was 86.6%, much higher as compared to 44.4.% in a study by OuYangjiang et al. [16] Similar to findings of this study, 87% of the health care workers knew route of transmission of tuberculosis and 98.1% knew the cause of tuberculosis in a study by Sima et al.[14]. Few limitations of this study includes small sample size, making study less generalizable and the data tool was not validated.

## Conclusion

This study provides knowledge, attitude and perception regarding tuberculosis among medical undergraduates. Current study results show proper knowledge regarding DOTS categories, tuberculosis drug categories and association of smoking with tuberculosis are some of the key areas requiring improvement for medical undergraduates. Few of the approaches like group discussions, active involvement of seniors during bed side teaching, seminars, presentations on recent guideline changes might help students to update their knowledge regarding tuberculosis.

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