

Knowledge about Tuberculosis among Undergraduate Medical Students in a Government Medical College in Tamilnadu, India

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Abstract: Tuberculosis is a global public health problem. It is a major cause of morbidity and mortality in India. Despite a persistent effort from government through revised RNTCP guidelines and by daily regimen (fixed dose combination). Multi drug resistant and extensively drug resistant are other threats for the persistent health problem. **Methods:** This study was undertaken to assess knowledge of undergraduate medical students about Tuberculosis under various sub headings. The present cross sectional study was done in the rural government medical college in Tamilnadu, India, among 96 undergraduate third year medical students. **Results:** Knowledge of Tuberculosis about routes of transmission and sites are affected was 98%, knowledge about causes, clinical features are about 80%, but knowledge about the diagnosis was 70% only. Same time the treatment categories and drugs availability was known to 85% of medical students. Consequences of irregular treatment were not known to 33% of medical students. **Conclusion:** Awareness created through theory classes, during world Tuberculosis day, through CME, but there is a need for hands on training by attending patients and by giving treatment should be given to make them more fluent in Tuberculosis in this crucial period of learning.

Keywords: Tuberculosis, Knowledge, Medical students

1. Introduction

Tuberculosis is a major public health problem. Global incidence in 2018 was 7 million new cases, over all estimated cases to be 10 million and the mortality 1.2million(1)In India after persistent efforts through RNTCP, Tuberculosis still remains as a major cause of morbidity(27%) and mortality. As per WHO Tuberculosis report 2019, 26,90,000 people had Tuberculosis in India out of which 19, 90,000 cases are notified. (1)

WHO and the UN MDG(3) together with the stop TB strategy(4) have developed strategies for eliminating TB, which have led reduction in number of TB deaths and TB incidence since 2000. MDR-TB and XDR-TB are other threats to recent anti-TB strategies (2). Studies conducted by NIRT Chennai and NTI Bangalore are indicative of a primary drug resistance level of 1.7 to 2.2% and 12 to 13% in retreatment cases, in some places upto 17.2%(3).

This problem of MDR-TB is due to inadequate treatment of Tuberculosis, for this correct knowledge about disease, diagnostic test, treatment as well as complications due to it are required.

Undergraduate period is very important and crucial period in the MBBS curriculum, where medical students acquire new knowledge and skills to apply those into practice.

Hence the present study was done to assess the knowledge of undergraduate medical students about Tuberculosis.

2. Objective

To assess the knowledge about Tuberculosis among third year undergraduate medical students.

3. Methods

Observational cross sectional study was done in Government Dharmapuri Medical college and hospital, Out of 100 students 96 students of third year medical students, those who are willing to take part in the study were included. Those who are not willing are excluded.

About the study was explained to all the participants, total study period is February 2019 to April 2019 – 3 months period, provided with semi structured questionnaire and maximum time allotted was 30 minutes. Pre-designed survey proforma was used consisting of questions regarding knowledge of Tuberculosis and MDR-TB. Total 30questions consists of causes, route of transmission, clinical features, treatment and national health programme guideline. Questionnaire was pretested with 10 undergraduate students modified and necessary changes made. Ethics committee approval obtained. RNTCP guidelines of 2018 considered as standard. Stastical tests used are percentage and chi square test with software spss 21 used.

4. Results

Study population and characteristics (Chart 1 & 2)

Total 96 medical students accepted the invitation, with among 100 students in third year 96 are took part in the study, in that 55 are females and 41 are males. The age of the participants ranged between 19 to 24 years.

TB knowledge (Table 1)

The study found that 80% are aware of causes and common symptoms of Tuberculosis. Knowledge about route of transmission and sites are affected by Tuberculosis are 98%,

Knowledge about available treatment, category, first line drugs, total duration of treatment and about daily regimen (fixed dose regimen) were 85%, but same time diagnostic test only 70% are aware of it, when it comes to consequences of irregular treatment only 67% are aware of it.

The study (table.2) also shows knowledge about multi-drug resistant Tuberculosis which was comparatively very low, what is and definition for MDR-TB is known to 70%, where are its causes were not known to 30%, when it comes to diagnostic criteria and category of MDR-TB only 40% are aware of it. But treatment options known to only 17%. About newer guidelines are known to 85% of the students.

From the (table.3) difference between knowledge of categories, diagnosis, treatment, consequences for TB and MDR-TB was highly significant (p value <0.001).

Knowledge about the recent newer guidelines are about 85% which is also highly significant. (P value <0.01).

5. Discussion

WHO recommendations that medical school should "provide every graduate with the knowledge, skills and attitude essential to the management of Tuberculosis in the patient and in the community as a whole" (5) was only partly studied in this study only knowledge in some aspects checked. Undergraduate period is very crucial where the theoretical knowledge has to be applied practically (6). TB is an ancient infectious disease with new threat of MDR-TB and XDR-TB but today representing 20% of global burden. (7) study conducted by Mehta D et al shows categorization of TB was done by only 56%, treatment regimen correctly done by 50% and treatment categorization under DOTS by 69% (8) study done by Laurenti P et al shows knowledge TB diagnosis was 55.2% and about treatment 48.4% are correctly answered (9) study done by Giri PA et al shows medical students correct response over all knowledge on TB was 80%, knowledge about diagnosis was 70%, treatment options & drugs available were 85% (10), study done by Jackson M et al shows 91.4% are aware of TB transmitted via aerosols and over all knowledge was 94% (11), study done by Fatemah B et al shows correct knowledge observed for etiology 92.9%, symptoms were 97.2%, transmitted from person to person were 97.9%, but diagnosis answered correctly by only 56.9% (12), where as in this study route of transmission and sites affected are answered correctly by 98%, regarding treatment available, categorization, first line drugs were 85%, cause of TB answered correctly by 80%, consequences due to irregular treatment were only 67% at the same time knowledge on MDR & XDR-TB treatment are only 18%, as per the different studies knowledge variation is seen. Accessing TB health education was significantly associated with core knowledge of TB.

6. Conclusion

In a country like India with high TB burden, it is very important to address the deficiencies in medical education; there is no doubt that enormous challenge to the effective control of tuberculosis in India. There is a need to

implement vertical and horizontal teaching methods in medical curriculum with special focus on tuberculosis and other infections with more practical training, by doing their will be significant impact on the management of tuberculosis, more seminars, conferences and hands on training for preventing the emergence of MDR & XDR-TUBERCULOSIS.

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Demographic characteristics of medical students

Demographic factors		Number	Percent
Sex	Male	41	43%
	Female	55	57%
Age			
19 to 22	Male	35	85%
	Female	55	100%
23 to 25	Male	6	15%
	Female	0	0%

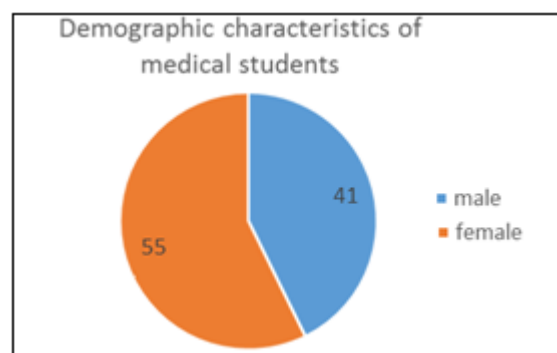


Chart 1: Demographic characteristics of medical student sex wise

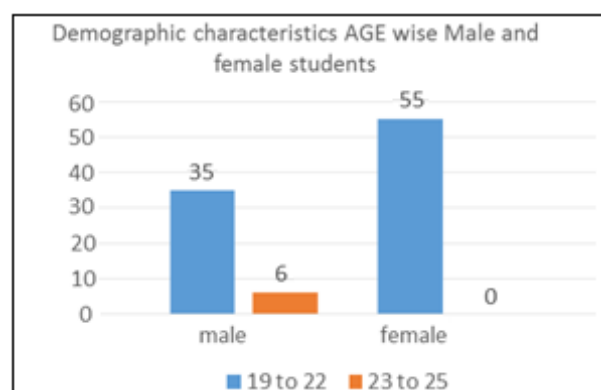


Chart 2: Demographic characteristics Age wise male and female students

Table 1: Knowledge about Tuberculosis

Question	Correct Response (%)	Incorrect Response (%)
Cause of Tuberculosis	77 (80)	19 (20)
Route of Transmission	94 (98)	02 (2)
Common symptom of Tuberculosis	77 (80)	19 (20)
Sites are affected by Tuberculosis	94 (98)	02 (2)
Diagnostic test of Tuberculosis	67 (70)	29 (30)
Category of treatment of Tuberculosis	82 (85)	14 (15)
First line drugs of Tuberculosis	82 (85)	14 (15)
Available treatment of Tuberculosis	82 (85)	14 (15)
DOTS	82 (85)	14 (15)

FDC (Daily regimen)	82 (85)	14 (15)
Total duration of treatment	82 (85)	14 (15)
Consequences of irregular treatment	64 (67)	32 (33)

Table 2: Knowledge about MDR-TB

Questions	Correct response (%)	Incorrect response (%)
What is MDR-TB	67 (70)	29 (30)
Causes of MDR-TB	67 (70)	29 (30)
Definition of MDR-TB	67 (70)	29 (30)
Diagnostic test for MDR-TB	38 (40)	58 (60)
Category of MDR-TB	38 (40)	58 (60)
Total duration of MDR-TB	17 (18)	79 (82)
Dots – plus	17 (18)	79 (82)
XDR-TB	16 (17)	80(83)

Table 3: Comparison of knowledge of undergraduates for Tuberculosis and MDR-TB

Tuberculosis	N (%)	MDR-TB (%)	P - Value
Knowledge of causation	77 (80)	75 (78)	0.12
Clinical features	77 (80)	75 (78)	0.12
Categories	82 (85)	38 (40)	<0.001
Diagnosis	67 (70)	38 (40)	<0.001
Treatment	82 (85)	17 (18)	<0.001
Consequences	64 (67)	16 (17)	<0.001

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