



ISSN Print: 2394-7500  
ISSN Online: 2394-5869  
Impact Factor: 5.2  
IJAR 2017; 3(5): 459-462  
www.allresearchjournal.com  
Received: 21-03-2017  
Accepted: 22-04-2017

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## Knowledge and awareness about tuberculosis among dental students in Saveetha dental college

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### Abstract

**Aim:** To study the knowledge and awareness of tuberculosis among dental students

**Objective:** To assess the extent of knowledge and awareness on tuberculosis among dental students in Saveetha Dental College

**Background:** Tuberculosis (TB) is a public health problem. One third of the world's population is infected with Mycobacterium tuberculosis. Tuberculosis (TB) is one of the top 10 causes of death worldwide. It has been estimated by the World Health Organization (WHO), that about 5000 people die of the disease and 20,000 are becoming infected each day. In 2015, 10.4 million people fell ill with TB and 1.8 million died from the disease (including 0.43 million people with HIV). Over 5% of TB deaths occur in low and middle income countries. Six countries account for 60% of the total with India leading the count, followed by Indonesia, China, Nigeria, Pakistan and South Africa

**Reason:** Knowledge and awareness of tuberculosis among dental students is important since they are the future physicians in fighting against it. Hence this study was conducted to determine the extent of knowledge and awareness of tuberculosis among dental students

**Keywords:** Knowledge, dental students, tuberculosis

### Introduction

Tuberculosis (TB) is a major public health problem. Tuberculosis is mainly caused by various strains of mycobacterium, usually Mycobacterium tuberculosis [1]. It is an aerobic pathogenic bacterium primarily affecting the lungs. Among all infectious diseases, tuberculosis (TB) remains to be the deadliest. Tuberculosis remains the second cause of death from infectious disease [2]. In India tuberculosis is the main factor of mortality and it causes the death of 2 people every 3 minutes [3]. In 1882, Robert Koch isolated and cultured the bacterium from crushed tubercles and identified mycobacterium tuberculosis as the etiological agent [2, 4].

Diseases capable of airborne transmission are influenza, pneumonia, tuberculosis, whooping cough and polio [3]. Infections can be spread through several routes in a dental office such as direct contact with blood, oral fluids or other secretions, indirect contact with contaminated instruments and contact with airborne contaminants present in either droplet splatter or aerosols of oral and respiratory fluids [3, 5]. Dental health care professionals (DHPs) are at a risk of infections such as M. tuberculosis, hepatitis B, hepatitis C viruses, streptococci, staphylococci, herpes simplex virus type 1, HIV, mumps, influenza, and rubella [3, 6].

Limited knowledge about signs and symptoms on tuberculosis results in delay in tuberculosis diagnosis and treatment planning which increases the risk of tuberculosis transmission and development of multi-drug-resistant (MDR-TB). Knowledge on tuberculosis among the dental profession is important as they are the future physicians in fighting against tuberculosis. The objective of this study is to assess the knowledge and awareness of tuberculosis (TB) along the dental students in Saveetha Dental College.

### Materials and Method

The survey was cross-sectional in design. Following participant self-administered enrolment in the study, data were collected by questionnaire that assessed participants' knowledge about tuberculosis signs/symptoms, transmission, management and control. This study was conducted among the clinical dental students in Saveetha Dental College. The questionnaire consisted of 13 multiple-choice questions.

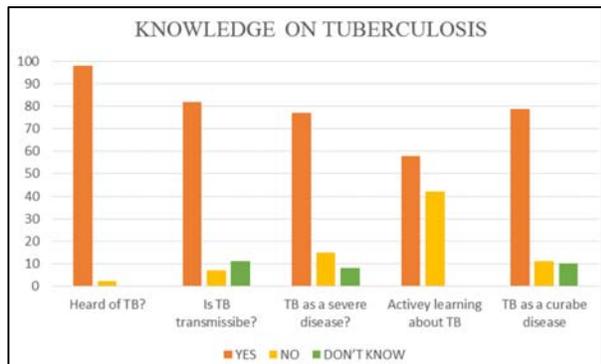
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Data was elicited on the following variables: knowledge on tuberculosis, symptoms, modes of transmission, diagnostic aids and treatment.

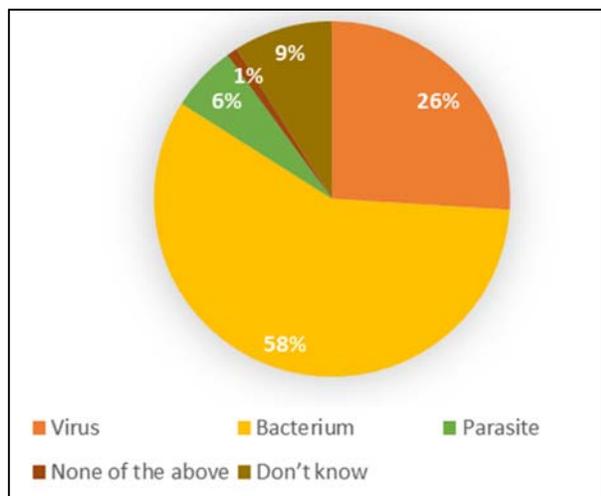
Once the students have answered the questionnaires, the responses were accounted for and analyzed using SPSS version and results were obtained

**Results**

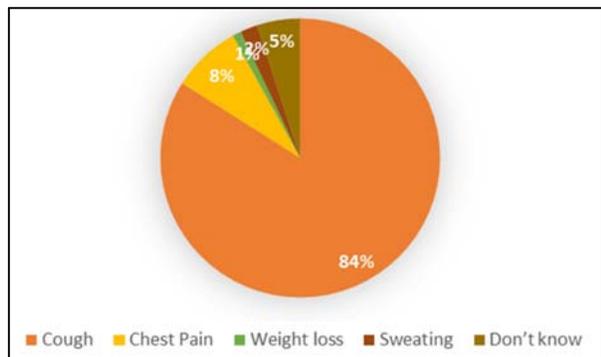
100 questionnaires were distributed to the dental students of Saveetha Dental College. Of which 55% were females and 45% of them were males. The data was tabulated and displayed as tables and charts.



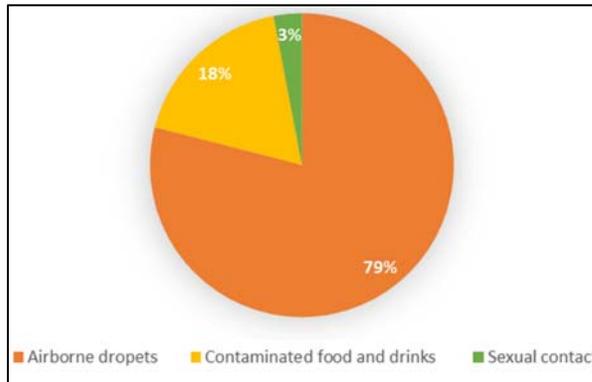
**Fig 1:** Knowledge and Awareness on questionnaire among dental students on Tuberculosis



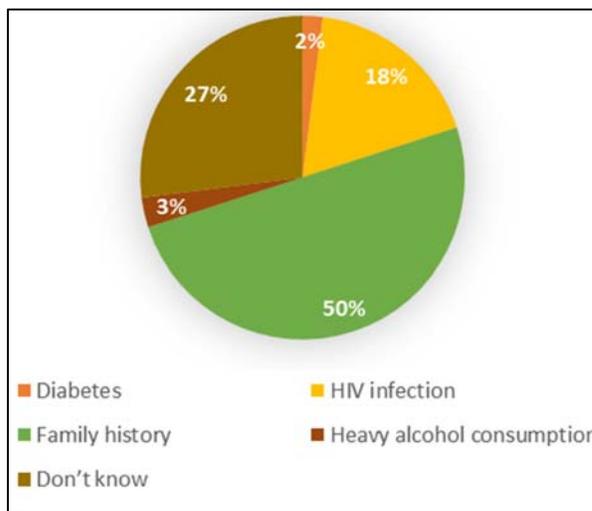
**Fig 2:** Knowledge on questionnaire among dental students on etiology of Tuberculosis



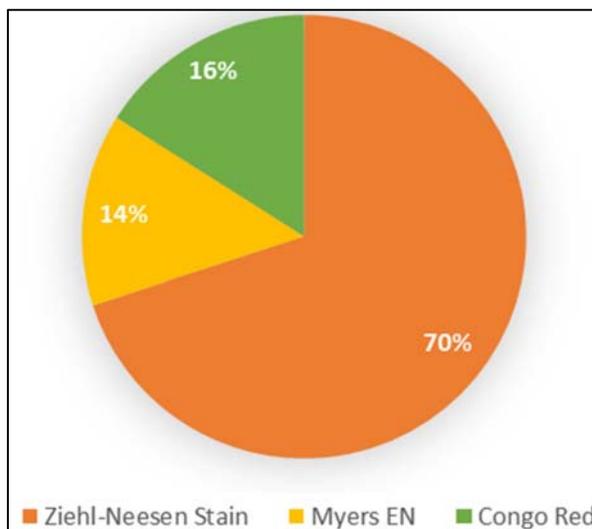
**Fig 3:** Knowledge on questionnaire among dental students on symptoms of Tuberculosis



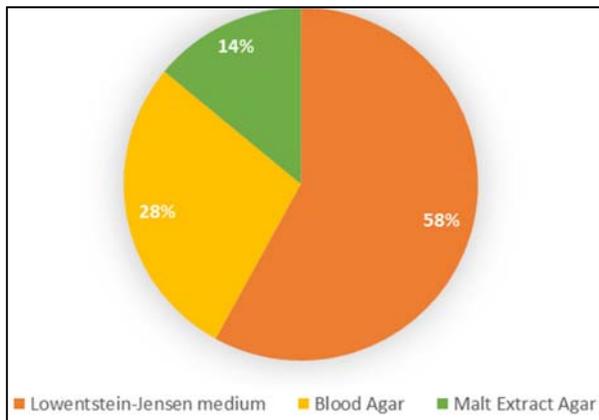
**Fig 4:** Knowledge on questionnaire among dental students on transmission of Tuberculosis



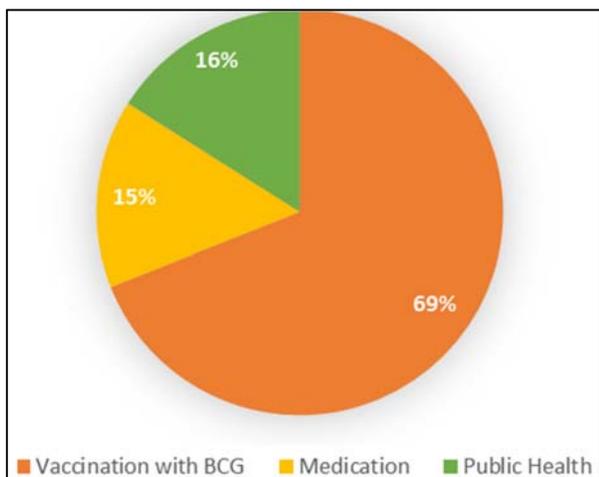
**Fig 5:** Knowledge on questionnaire among dental students on risk factor of Tuberculosis



**Fig 6:** Knowledge on questionnaire among dental students on staining of Tuberculosis



**Fig 7:** Knowledge on questionnaire among dental students on culture media of Tuberculosis



**Fig 8:** Knowledge on questionnaire among dental students on treatment of Tuberculosis

**Discussion**

Tuberculosis is one of the most important global public health threats. If proper measures are not taken to control the incidence of tuberculosis, there will be an increase in the annual global incidence which is expected to increase from 21% to 61% by 2020. Early detection and adequate treatment are critical control measures [7]. Dental practitioners play a vital role in the prevention of tuberculosis even though they won't be the ones who will be treating the disease. However they will need the knowledge to be able to identify this disease if it presents itself in a patient.

When asked whether tuberculosis is a curable disease, 79% of the participants said that Tuberculosis (TB) is a curable disease. Zhao conducted a study on medical students in South-West Asia [7] which showed that 80% of the participants knew that tuberculosis is curable. Tuberculosis is a curable disease and is treated with a standard six-month course of four antimicrobial drug [8]. This shows that the participants realize that tuberculosis is not a life-threatening disease and it can be treated with a proper course of medication.

Present study showed that, 58% of the participants knew that tuberculosis was caused by mycobacterium tuberculosis, which is in accordance to the study conducted by Easwaran et.al [9] 84% knew that cough is the mode of

transmission for tuberculosis. 50% of the participants in the present study have chosen family history as one of the cause of tuberculosis which is in accordance to the study conducted by Yadav.S et.al [11] where in the respondents had a misconception that it was an hereditary disease.

From the present study, 79% of the participants knew that tuberculosis was transmitted by airborne droplets which is similar to the study conducted by Koay et.al [12] The participants were also aware that cough and chest pain are the main symptoms of tuberculosis which correlates with the study by Yadav et.al [11]. Similar to our study, a worldwide internet survey by Corless implied that around 49% of the respondents reported that cough as the commonest symptom of tuberculosis [13].

Our study showed that, 58% of the participants had sufficient knowledge on the culture media for tuberculosis. Huebner found that ninety-eight percent (55 of 56) of the laboratories culture for mycobacterium.70% laboratories use solid media such as Lowenstein-Jensen or Middlebrook agar [10] The level of knowledge of the participants on stains used to identify tuberculosis in our study is 70%. Huebner et.al stated that microscopy is the simplest and most rapid procedure currently available to detect the presence of acid fast bacilli in clinical specimens. Both basic fuchsin (Ziehl-Neelsen and Kinyoun) and a fluorochrome dye are available for staining acid fast bacilli. Ziehl-Neelsen stain is a true technique used for acid-fast bacilli specimens and the results obtained through this are meaningful [10] With the proper knowledge on the diagnostic tools and how to interpret the results, a proper diagnosis can be given to the patient.

The participants in the present study had adequate knowledge on prevention of tuberculosis which is through vaccination with BCG. 68% of the participants knew that BCG immunization should be given during childhood which is in agreement with the study done by Koay et.al [12] Early prevention is essential thus dental students should have knowledge on this so that they can advise patients on how they can prevent tuberculosis from a young age. This knowledge should not only be present among dental students but also among civilians to ensure that the future generation are immune from this disease.

We can confirm from the present study that the level of basic knowledge regarding tuberculosis is good whereby precautionary measures can be taken to prevent an increase in the incidence of tuberculosis. Thus, an attempt should be made in the future to improve awareness among the illiterate regarding the misconception on Tuberculosis (TB).

**Conclusion**

The level of knowledge and awareness of tuberculosis among dental students in Saveetha Dental College was good. The trend of the prevalence of TB is growing each day thus sufficient knowledge and awareness must be present in every individual. As future physician, we play a major role in fighting against TB.

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