

## KNOWLEDGE ON TUBERCULOSIS AMONG THE STUDENTS OF A SELECTED PRIVATE UNIVERSITY IN BANGLADESH

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**Abstract:** Tuberculosis is one of the top 10 causes of death worldwide, and one of the major public health problems in Bangladesh. The purpose of the study was to assess the knowledge on TB among the students of Daffodil International University. This cross-sectional study was conducted at Daffodil International University from April to August 2020. And data were collected using structured questionnaire. Among 145 students, more than eight-tenths (81.4%) of them were in the age group 20-29 years old, and the mean ( $\pm$ SD) age of the respondents was 26 ( $\pm$ 4.3) years. Male and female were 74.5% and 25.5% respectively. Most of the students (73.1%) knew that bacterium is the cause of TB. About seven-tenths (71.7%) knew that TB is transmitted via droplet. 48.2% believed covering mouth and nose when coughing or sneezing “droplet control” can prevent getting TB or transmitting it, regarding BCG vaccine against TB in children majority of respondents (39%) were aware about it. 80.0% of the students believed that TB is curable disease. The study revealed that majority of respondents had good level of knowledge regarding the tuberculosis disease. The level of knowledge is associated by the educational level of respondents.

**Keywords:** Bangladesh, knowledge, respondents, students, tuberculosis.

### Introduction

Tuberculosis (TB) is a chronic communicable bacterial disease that remains an important public health problem, especially in developing countries. The disease is an airborne infectious disease caused by bacteria called “mycobacterium tuberculosis” which primarily affect the lungs<sup>1</sup>. The TB is transmitted from one person to another through the air that contains TB microbes from cough, speak and sneeze of active lung tuberculosis people while people with the latent form don’t transmit the disease into air<sup>2</sup>.

In spite of being preventable and treatable, the worldwide TB report of 2019 highlighted that TB presently positions as a driving irresistible infection executioner universally nearby human immunodeficiency infection (HIV), in 2018 an evaluated 10 million individuals gotten to be sick with TB, coming about in 1.5 million passings<sup>3</sup>. More than 90.0% of worldwide TB cases and passings happen within the creating world, where 75.0% of cases are within the most economically productive age gather<sup>4</sup>. Moreover, TB may be a driving cause of passing of HIV- positive individuals, in 2015 one in three (1/3) HIV passings was due to tuberculosis<sup>3</sup>. In arrange to conclusion the TB plague, reinforcing of wellbeing and social divisions is required by accomplishing all-inclusive wellbeing scope and social security, which are too emphasized inside the framework of the modern feasible improvement objectives (SDGs) motivation<sup>5</sup>.

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## Knowledge on Tuberculosis among the Students of a Selected Private University .....

The control of TB can be accomplished with a tall level of information with respect to overseeing the hazard components and tall chance bunches<sup>6</sup>. Combating TB was portion of one of the goals of millenniumdevelopment goals, in (SDGs) it has been placed under the health-related targets to reduce its epidemics, the target has been set to reduce TB incidence and TB- related deaths by 90.0% and 95.0% respectively in the year 2035 in comparison to 2015<sup>7</sup>.

TB positions as the eighth driving cause of passing in low-and middle-income nations<sup>8</sup>. 82.0% passings happen in 22 tall burden nations (HBCs) and Bangladesh positions 6th among HBC, where the frequency rate for TB was 350 per 100,000 populace and TB mortality rate was 36 per 100,000 populaces in 2018<sup>1</sup>. Moo mindfulness, instruction, wage and tall populace thickness, smoking, diabetes, certain drugs and other related illnesses are the contributory variables for TB in Bangladesh<sup>9</sup>. To battle TB The National Tuberculosis Program (NTP) of the Government of Bangladesh (GoB) embraced the coordinate watched treatment brief course (Dabs) methodology in 1993<sup>10</sup>. Building Assets over Communities marked a Notice of Understanding with the GoB in 1994 to extend Specks administrations across the nation to fortify wellbeing framework and grow Dabs across the country since 2004<sup>11</sup>.

In Bangladesh, TB case notices have expanded altogether since 2012, basically driven by expanded numbers of extra-pulmonary and clinically analyzed aspiratory cases<sup>10</sup>.The Bangladesh NTP gives key authority for effective association and collaboration of private and other open healthcare suppliers. The most exercises of the NTP incorporate advancement of early discovery of sputum smear-positive patients, determination of TB other than smear-positive cases, organization of treatment conveyance through Specks at all levels through community cooperation, arrangement of customary preparing and refresher courses to all staff included within the NTP, and fortifying participation and collaboration between the government of Bangladesh and non-governmental organizations included within the control of TB<sup>12</sup>. This consider is pointed to evaluate the information on TB among understudies of chosen private college of Bangladesh.

### Materials and Methods

This cross-sectional study was conducted at Daffodil International University (DIU) in Dhaka, Bangladesh from April to August 2020. The target population of this study was students of DIU who were available during the study.

The sampling technique study population and convenient sampling was used. Students the five faculties of DIU were included in the study.

### Sample size determination

The sample calculated using the following formula:

$$n = \frac{Z^2 pq}{d^2}$$

Where, n= desired sample size

Z is the Z- value corresponding to 95% level of significance which equals to 1.96

P= 40% prevalence rate of TB which was taken from the annual report 2018 of the WHO India.

q= (1-p) = (1-0.40) = 0.6 and

d= absolute precision (5%)

Therefore, by simply apply the above value to the formula we get the following sample size:

n= 368 = the total sample size was 368 but due to lockdown, constraints in time and resources only 145 sample was taken.

The research instrument used in this study was self-administered written questionnaire. Data were collected through self-administered pre tested structured questionnaire which is delivered to the students. The questionnaire was prepared in google form and distributed online through email. The questionnaire covered included information about socio-demographic characteristics and knowledge of respondents to the causative agent, mode of transmission and prevention method of TB. Data were analyzed by using Statistical Package for Social Sciences (SPSS-20) version 20.0. Descriptive statistical analysis was used to calculate the frequencies and percentages. The descriptive analysis of data was presented as tables.

## Results

### Socio-demographic distribution of the respondents

Table 1 showed that more than eighty (81.4%) of the respondents were in the age group 20-29 years old, followed by 30-39 (11.7%) and the mean ( $\pm$ SD) age of the respondents was 26 ( $\pm$ 4.3) years. More than seventy-four (74.5%) of the respondents were male and the rest were females. According to educational level of respondents sixty (60.7%) had bachelor degree, followed by master degree (38.6%). According to marital status more than eighty (82.8%) of the respondents were single and the rest were married. close to seventy (69.0%) of respondents were living in private rented homes with friends, followed by (29.0%) living with their families.

### Distribution of respondents among university faculties

According to table 1 majority (32.4%) of the participants were faculty of allied health science, 26.1% faculty of science and information technology, 21.4% faculty of engineering, 11.7% faculty of humanities and social science, and the rest were faculty of business and entrepreneurship.

### Knowledge of respondents to the causative agent

Table 2 showed that more than seven-tenths (73.1%) of the respondents were knew that the bacteria is the causative agent of TB, followed by 11.1% who believed that fungi is the cause, whereas 9.6% of respondents claimed that the virus causes the tuberculosis.

Table 2 knowledge of respondents to the causative agent (n=145), mode of transmission of tuberculosis (n=145), who are at risk to tuberculosis (n=145) and the method of prevention of tuberculosis (n=145)

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Table 1: Socio-demographic distribution of the respondents

Variables	Frequency	Percentage
Age		
<19	5	3.45
20-29	118	81.4
30-39	17	11.7
40 and above	5	3.45
Mean± SD	26±4.3	
Sex		
Male	108	74.5
Female	37	25.5
Educational level		
Diploma	1	0.7
Bachelor	88	60.7
Master	56	38.6
Marital status		
Single	120	82.8
Married	25	17.2
To whom you living with		
Family	42	29.0
Hostel	3	2.0
Home with friends	100	69.0
Faculty		
Faculty of allied health science	47	32.4
Faculty of science and information technology	38	26.2
Faculty of engineering	31	21.4
Faculty of humanities and social science	17	11.7
Faculty of business and entrepreneurship	12	8.3
Total	145	100

Table2:Knowledge of respondents to the causative agent

Knowledge Areas	Frequency	Percentage
<b>Causative agent</b>		
Bacteria	106	73.1
Fungi	16	11.1
Virus	14	9.6
I don't know	9	6.2
Total	145	100
<b>Mode of Transmission</b>		
Air borne "droplet spread"	104	71.7
Hand shaking with patient	13	9
Touching public items	10	6.9
Sexual intercourse	3	2
I don't know	15	10.3
Total	145	100
<b>Risk Factors</b>		
Malnutrition	60	41.4
Obesity	20	13.8
Comorbidity	40	27.6
Gymnasium	25	17.2
Total	145	100
<b>Prevention Methods</b>		
Covering mouth when coughing or sneezing	70	48.2
Avoid handshaking with patient	13	9
Good nutrition	41	28.3
Hand washing after touching public items	11	7.6
Avoid sharing dishes	10	6.9
Total	145	100

Table 3 knowledge of respondent's whether TB disease had a vaccine or not (n=145)

Variable	Frequency	Percentage
<b>TB had a vaccine "preventable" (n=145)</b>		
Yes	110	76.0
No	16	11.0
I have no idea	19	13.0
<b>What is the of the vaccine (n=110)</b>		
BCG	43	39.0
OPV	26	24.0
HBV	27	24.0
DPT	14	13.0

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### Knowledge of respondents to the mode of transmission of tuberculosis

Table 2 showed that more than seven-tenths (71.7%) of the respondents were aware that the TB disease is transmitted from one person to another, when person with TB sneezes or coughs “droplet spread”. 9.0% believed that the disease spread via handshakes with patient, 6.9% were claimed that the disease spread through touching items in public places, whereas 10.3% have no idea to the mode of transmission.

### Knowledge of respondents who are at risk to tuberculosis

According to table 2 more than four-tenths (41.4%) of the respondents claimed that malnourished people are at risk with TB 27.6% stated that people with comorbidity are at risk with tuberculosis, whereas 13.8% and 17.2% of respondents believed that obese persons and gymnasium are at risk respectively.

### Knowledge of respondents to the method of prevention of tuberculosis

Table 2 showed that close to five-tenths (48.2%) of the respondents were claimed that the covering mouth and nose during coughing or sneezing can prevent getting TB or transmitting it, 28.3% stated that good nutrition prevent from getting TB, 9.0% believed avoid handshaking of patient prevent whereas 7.6% believed that washing hands after touching in public places.

### Knowledge of respondent’s whether TB had a vaccine or not

Table 3 showed that more than seven-tenths (76.0%) of the respondents were knew that the TB disease has a vaccine used to protect him. According to name of the vaccine 39.0% were aware that the BCG is the specific vaccine of tuberculosis, 24.0% were claimed that the vaccine is called OPV, 24% and 13% were claimed HBV and DPT respectively.

## Discussion

This cross-sectional study was conducted among the students of Daffodil International University, Dhaka, Bangladesh, with a view to assess their knowledge on TB particularly the causative agent, mode of transmission and the prevention method. In this study more than eight-tenths (81.4%) of the respondents were in the age group 20-29 years old, followed by 30-39 (11.7%) and the mean ( $\pm$ SD) age of the respondents was 26 ( $\pm$ 4.3) years. More than Seven-tenths (74.5%) of the respondents were male and the rest were females. According to educational level of respondents three-fifths (60.7%) had bachelor degree, followed by master degree (38.6%). According to marital status more than eight-tenths (82.8%) of the respondents were single and the rest were married. close to seven-tenths (69.0%) of respondents were living in private rented homes with friends, followed by (29.0%) living with their families.

In the present study more than seven-tenths (73.1%) of the participants responded that the bacteria is the causative agent of tuberculosis, where (9.6%) responded virus is the cause, (11.1%) responded fungi and (6.2%) have no idea. our findings is lower than that of similar study “Towhida akter, 2016” in same country where (80%) of the study participants responded that the bacteria is the cause of TB<sup>13</sup>. Our findings is higher than that of “Rana et al., 2013” where (42.8%) of the participants responded that the bacteria is the cause of TB<sup>9</sup>.

According to the mode of transmission more than seven-tenths (71.7%) of participants believed that the TB disease is transmitted from one person to another, when person with tuberculosis sneezes or coughs “droplet

spread”, where (9.0%) believe TB spread through handshake with patient. Our findings is lower than that of similar study “khalid and abdalla, 2011” in another country where (81.0%) of participants responded that TB spread by droplet from cough or sneeze of active TB patient<sup>14</sup>. Our findings is consistent with similar study (rana et al, 2013) where (74.0%) of the participants responded that TB spread from person to another through coughing or sneezing<sup>9</sup>.

According to the prevention method close to five-tenths (48.2%) of respondents claimed that the covering mouth and nose during coughing or sneezing “droplet control” can prevent getting TB or transmitting it, 28.3% stated that good nutrition prevent from getting TB, this result is higher than that of “Sagir et al., 2018”<sup>8</sup>. regarding BCG vaccine against TB in children majority of respondents (39.0%) were aware about the vaccination of TB. Our finding is lower than that of similar study (manjunath and dhar, 2012) in another country where (91.0%) of the respondents knew BCG vaccine in children prevents TB<sup>15</sup>. According to the curability of TB disease Eight-tenths (80.0%) of the students knew that TB is curable disease. Our finding is consistent with similar study “Sagir et al., 2018” in same country where (79.4%) of participants responded that TB is curable disease<sup>8</sup>.

## Conclusions

In this cross-sectional study 145 university students from five different faculties were surveyed on their knowledge about TB, particularly causative agent, mode of transmission and prevention method. The study revealed that more than seventy-three (73.1%) of the students knew that bacteria is the cause of TB. More than seventy-one (71.7%) knew that TB is transmitted via droplet. Close to forty- nine (48.2%) believed covering mouth and nose when coughing or sneezing “droplet control” can prevent getting TB or transmitting it, regarding BCG vaccine against TB in children majority of respondents (39.0%) were aware about it. Eighty (80.0%) of the students believed that TB is curable disease. However, the main limitation of the present study is relatively small sample size.

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