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Knowledge on tuberculosis among students of higher secondary school, lalitpur, Nepal

Abstract

The descriptive study conducted to assess the knowledge on tuberculosis among students of higher secondary school, Lalitpur, Nepal was carried out utilizing non-probability purposive sampling technique among +2 students.

The analysis of the data revealed that all the respondents had little knowledge about tuberculosis. Among those, 92% respondents got information from media and teachers, 90% respondents received from newspaper and health-worker. Majority of the respondents (80%) said that tuberculosis is the communicable bacterial diseases whereas 12% said that it is hereditary diseases, majority of the respondents (80%) said that bacteria are the causative organism of the tuberculosis. The entire respondent knew that TB is curable disease but they lack knowledge about diagnostic feature of TB and DOTS treatment therapy and its duration. In regard to the detection of the tuberculosis, majority (94%) of the respondents said sputum test and chest X-ray help to detect tuberculosis, 90% said on the basis of sign and symptoms. Only 10% respondents had heard about mountex test. Among them, 40% said skin is taken as the sample unit for mountex test as well as 20 (40%) said that blood as sample. More than two third (78%) knew that the patients should not be admitted in hospital to receive treatment. More than half (56%) had heard about DOTS for the treatment of tuberculosis. Among those, 28% knew that DOTS is taken for 6-8 months. In the nut shell, knowledge on TB among students of higher secondary school should be promoted through enhancement of relevant health education. The knowledge should be raised through media, various awareness programs through involvement of parents, teachers and health personnel. Proper knowledge about tuberculosis will provoke a way to prevent the spread and management of TB through proper treatment in this developing world.

Keywords: tuberculosis, higher secondary school student, awareness, prevention of TB, plaguing, mycobacterium

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Introduction

Tuberculosis is an infectious disease caused by the bacterium Mycobacterium tuberculosis, which generally affects the lungs, but can also affect other parts of the body. Most infections are as asymptomatic latent tuberculosis, of which about 10% of latent infections progress to the active disease.[1] It has been probably recognized since Stone Age. The traces of tuberculosis lesions have been found in skull and spines of Egyptian mummies, tell us that TB has been plaguing humans for at least 4000years.[2] Now-a-days due to many great technological development like invention of streptomycin, sulfonamide, Para-amino-salicylic acid, ionized, BCG vaccine, tuberculin and anti tubercular drugs; implementation of principle of national TB control program as well as directly observed treatment short course (DOTS) have been easily available in all over the world. However, TB is still the leading infectious cause of morbidity and mortality among adults and has claimed the lives of more than 200millions peoples since 1882.[3,4]

Globally, tuberculosis is a threat with nearly two billion people (one third of the world's population) harboring latent infection. Based on surveillance and survey data, WHO estimates that 9.27million new cases of TB occurred in 2012 (139 per 100000 population), while in 2006, 9.24million new cases (140/100000) was diagnosed. Among 9.27million new cases, an estimated 44% or 4.1million (61 per 100000 population) were new smear positive cases.[5] There were an estimated 13.7million prevalent cases in 2013 (206 per 100000 population), a slight decrease from 2012.[6]

Similarly mortality rate of TB is 1.32millions populations in 2013. Asia (south-east Asia and Western pacific regions) accounts of 55% of global cases. Twenty two high burden countries (HBCs) collectively account for 80% of TB cases globally. Countries in the south-east Asia region have to make steady progress of TB control. The region still account for the highest number of TB patient globally, carrying over 34% of the worlds TB burden. The south-east Asia region, with an estimated 4.88million prevent cases and annual incidence of 3.17million TB cases, carries one third of the global burden of TB. Five of the 11 member countries in the region are among the 22 high-burden countries. The SAARC region, with an estimated 4.4million prevalent cases and an annual incidence of 2.7million TB cases, carries 29.3% of the global burden of TB. Four of the eight member countries in this region are among the 22 high burden countries. The disease still claims more than four lakhs lives each year.[7]

In contest of Nepal, Tuberculosis remains one of the major public health problems. About 45% population is infected with TB, of which 60% are adult. Nepal with an annual estimated 240 per 0.1million population (67546) prevalent cases and incidents of 173 per 0.1million population (48766) TB cases. The mortality due to TB estimated is 23 per 0.1million of all forms of TB.[7] According to DOHS, in Lalitpur district, the cases finding rate of tuberculosis was found to be 57% in 2013. Every year 40000 people develop active TB, among them 20 thousand have infectious pulmonary disease. Treatment by DOTS has reduced the number of deaths; however five thousand to 7 thousand people still die per year from TB even though DOTS have been successfully implemented throughout. Nepal co-ordinates with

the private sector, local government bodies, NGOs, Social workers, education sectors and other sectors of the society in order to expand DOTS and sustain the significant results achieved by NTP (National Tuberculosis Program). By 16th July 2008 DOTS has been expanded to 1079 treatment centre with 3147 sub centre. The treatment success rate stands at 88.1 percent and case finding rate of 71.39 percent. At the national level 33,419 TB patients have been registered, among them 14,640 infectious are being treated under the DOTS strategy in NTP during the FY 2012/13.[7,8]

Even after 50years of the introduction of effective chemotherapy, TB still remains the biggest killer of young people, women and children in world. SAARC TB control program in Nepal has also emphasized in public awareness and advocacy program on TB and HIV/ AIDS though school (teacher/ student), media, medical colleges and NGOs of Nepal.[7]

TB has also been encountered in children of school going ages. School children and the women are the more vulnerable groups susceptible to TB infections. TB control program also planned to create awareness about TB through the active participation of school and school students. Tuberculosis has also been included in the curriculum of the school children of class nine and ten with a view to impart knowledge on TB.

Hence this study is planned to assess the knowledge on tuberculosis among all school going students of developing countries like Nepal. The use of various sources of information to impart knowledge about tuberculosis like Medias, health personnel, teachers, family members are useful to prevent spreads of TB. Similarly, developments of necessary materials in increasing student's knowledge about TB, emphasis of knowledge regarding tuberculosis in syllabi of school students should be a tool to prevent and manage tuberculosis, and to reduce the mortality and morbidity rates in the country.

Material and methods

A descriptive, questionnaire based study was adopted to assess the knowledge regarding tuberculosis among college students especially 10+2 students of white House college, khumaltar, satdobato, Lalitpur, Nepal in the duration of 6 months from 1st October 2014 to April 2015. We studied various independent variables like age of respondents, education level of parents, source of information, availability of health services, environment etc. The sampling technique used here is based on non-probability convenient sampling by selecting 50 students from each section of class 10+2 for the study.

In order to measure the research variable, a semi-structured questionnaire was designed in english medium. The questionnaire consisted of four parts;

a. Part1: socio-demographic information

b. Part 2: questions related to knowledge on TB as per objectives

c. Part 3: questions related to the preventive measures for TB

d. Part 4: questions related to the treatment of TB

We explained about the research and its objective and questions to respondents and then the questionnaire was distributed to the participants giving them 45minutes to fill the questionnaire.

Ethical consideration

Written and verbal informed consent was taken from Ethical Committee of Hope International College, Satodobato, Lalitpur, Nepal and anonymity of the participants was maintained. Confidentiality of data was ensured. Written consent from Director of white House College for conducting data collection was also taken to collect data.

Data analysis

The data collected were entered in Microsoft excel 2007 and analyzed by SPSS 15.

Result

This primary data collected from the self administered questionnaire and the subsequent inference drawn from them. The data have been arranged orderly in the concise and logical order to facilitate interpretation.

The Table 1 reveals that more than half (58%) of the respondents were male and 42% were female. Concerning the age of the respondents, half of the respondents were at 15years of age where as 46% respondents were at 16years and 4% only were at 14years. The mean age of the respondent's was 15.42years. Regarding religion of the respondents, majority (96%) of the respondents were Hindu whereas 2 % were Buddhist and 2% of the respondents were Christian. Among the respondents regarding their caste, nearly half (48%) of the respondents were Newar, 32% of the respondents were Chhetri, 16% were Brahmin and 4 were Rai.

Table 1 Personal information of the respondents

Characteristics	Number	Percentage (%)
Sex		
Male	29	58
Female	21	42
Age		
14 years old	2	4
15 years old	25	50
16 years old	23	46
Religion		
Hindu	48	96
Christian	1	2
Buddhist	1	2
Ethnicity		
Brahmin	8	16
Chhetri	24	48
Newar	16	32
Others	2	4

Citation: Sah BK, Sah JP, Shah SK, et al. Knowledge on tuberculosis among students of higher secondary school, lalitpur, Nepal. *MOJ Public Health.* 2016;4(5):133–141. DOI: 10.15406/mojph.2016.04.00091

The Table 2 shows that more than three fourth (78%) of the respondents were living in nuclear family, followed by joint family (20%) and extended family(4%). Concerning the number of family members, more than half (58%) of the respondents had family members ranging 1-4 where as 40% had members ranging 5-8 and 2% had the number of family members above 8.

Table 2 Family background of the respondents

Characteristics	Number	Percentage
Family Status		
Nuclear family	39	78
Joint family	10	20
Extended family	1	2
Family Range	**Number of family members**	
1-4	20	40
5-8	29	58
8 and above	1	2

The Table 3 shows that majorities (94%) of the fathers were literate and 6% were illiterate. Among them, about half (52%) of the fathers of the respondents had secondary level education and only 8% had master's level education. Among the literate mothers (n=32), less than three fourth (72%) had secondary level education and 3% of mothers had bachelor's and master's level education.

Table 3 Education Status of the Parents

Characteristics	Number	Percentage
Education Level of Father		
Illiterate	3	6
Literate	47	94
Secondary level	26	52
Higher Secondary level	13	26
Bachelor's lever	4	8
Master's level	4	8
Education Level of Mothers		
Illiterate	18	36
Literate	32	64
Primary level	3	6
Secondary level	23	46
Higher Secondary level	4	8
Bachelor's level	1	2
Master's level	1	2

The Table 4 shows that the occupation of the fathers of the respondents in which they were engaged. It shows that half (50%) of the fathers were engaged in service, rest were in business, agriculture, driving, guard. Majorities (88%) were found to be housewives and rests were engaged in service, business and agriculture.

Table 4 Occupation of Parents

Characteristics	Number	Percentage
Occupation of Father		
Agriculture	10	20
Business	10	20
Daily wages	25	50
Others	5	10
Occupation of Mother		
Agriculture	4	8
Business	2	4
Service	4	8
Housewife	39	78
Others	1	2

The Table 5 shows that nearly three fourth (74%) of the respondents had room ranging 5-8, 14% had rooms 1-14 whereas 12% had rooms more than 8. In regards to the types of fuel used by the respondents for cooking, majority (88%) used liquefied petroleum gas, 14% used chulo (firewood), 8% used stove (kerosene oil) and 2% used biogas for cooking.

Table 5 Housing environment of the respondent

Characteristics	Number	Percentage
Number of Rooms Used		
1-4	7	14
5-8	37	74
8 and above	6	12
Types of Fuel Used		
Liquid field petroleum gas	44	88
Stove (kerosene oil)	4	8
Chulo (firewood)	7	14
Others	1	2

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The Table 6 shows that all of the respondents had knowledge that smoke predisposes tuberculosis. Among the respondents, majority (98%) of the respondents had knowledge that smoking by self and smoking by others can predispose tuberculosis.

Table 6 Housing Condition of the Respondents

Characteristics	Number	Percentage
Smoke Predisposes Tuberculosis		
Yes	50	100
No	0	0
If Yes, Smoke Types which Predispose Tuberculosis		
Smoking by Self		
Yes	49	98
No	1	2
Smoking by Others		
Yes	18-Feb	98
No	1	2
Smoke from Firewood		
Yes	34	68
No	16	32

The Table 7 reveals that all of the respondents had heard about tuberculosis. Among those, 46 (92%) respondents got information from media and teachers, 45 (90%) respondents received from newspaper and health -worker, 40 (80%) from family members and 31 (62%) received from friends.

Table 7 Source of Information about TB

Characteristics	Number	Percentage
Heard about Tuberculosis		
Yes	50	100
If yes, Source of Information		
Media	46	92
Newspaper	45	90
Friends	31	62
Family members	40	80
Teacher	46	92
Health workers	45	90

The Table 8 reveals that majority (88%) of the respondents said that tuberculosis is the communicable bacterial disease whereas 20 (40%) said that it is the disease due to smoking and alcohol, 69 (12%) said that it is hereditary disease. Majority (84%) of the respondents said that bacteria is the causative organism of the tuberculosis whereas 10 (20%) of respondents said that it is caused due to virus.

Table 8 Type of Disease

Characteristics	Number (n=50)	Percentage
Tuberculosis is		
Communicable bacterial disease	44	88
Disease due to smoking and alcohol	20	40
Hereditary disease	6	12
Causative Organism of Tuberculosis		
Bacteria	42	84
Virus	10	20
Parasites	1	2

The Table 9 shows that more than three fourth (78%) said that it does not only affect lungs whereas 11 (22%) said that it only affects lungs. Less than half (42%) of the respondents knew about pulmonary tuberculosis, 16 (32%) knew abdominal tuberculosis, 8 (16%) of the respondents knew about bone tuberculosis. No one had been affected by tuberculosis yet.

Table 9 Type of Tuberculosis

Characteristics	Number	Percentage
Tuberculosis Affects only Lungs		
Yes	11	22
No	39	78
Types of Tuberculosis		
Pulmonary tuberculosis		
Abdominal tuberculosis		
Bone tuberculosis		
Others		
Ever affected by it		
No	50	100

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The Table 10 shows that all of the respondents knew that smoking is the risk factor of tuberculosis, almost all (98%) of the respondent knew that infected person are the risk factors of tuberculosis, 41 (82%) thought that poor sanitation is the risk factor for tuberculosis and 7 (14%) thought overwork as risk factor.

Table 10 Knowledge about risk factor of tuberculosis

Characteristics	Number	Percentage
Risk Factors of Tuberculosis		
Through infected person	49	98
Overwork	7	14
Lack of sanitation	41	82
Smoking	50	100

The Table 11 shows that in regard to the spread of tuberculosis, majority (96%) of the respondents knew that it is spread through infected air droplets, more than three forth (76%) said through sharing, 36 (72%) said through food and water, 32 (64%) through overcrowding and 12(24%) said through bad spirits.

Table 11 Knowledge about route of transmission

Characteristics	Number	Percentage
Route of Transmission		
Infected air droplets	48	96
Food and water borne	36	72
Sharing Pates	38	76
Due to bad spirits	12	24
Overcrowding	32	74

The Table 12 reveals regarding modes of transmission of the tuberculosis, majority (82%) said through infected patient and 39 (78%) said from pregnant mothers.

Table 12 Knowledge about modes of transmission

Characteristics	Number	Percentage
Modes of Transmission		
Living with TB infected persons	41	82
Sharing foods	30	60
Sharing utensils	37	74
From pregnant mothers to baby	39	78
Others	2	4

The Table 13 shows concerning the sign and symptoms, almost all (98%) said that chest pain, cough more than 2weeks is the sign and symptoms, 47 (94%) said weight loss, loss of appetite, 45 (90%) said fever at night and night sweat, tiredness, blood in sputum each and 44(88%) said that 2 or more than 2weeks fever is the sign and symptoms.

Table 13 Knowledge about signs and symptoms of tuberculosis

Characteristics	Number	Percentage
Signs and Symptoms of Tuberculosis		
2 or more than 2 weeks fever	44	88
Fever at night	45	90
Chest pain, cough more than two weeks	49	98
Weight loss, loss of appetite	47	94
Night sweat, tiredness, blood in sputum	45	90

The Table 14 shows that majority (96%) of the respondents said smokers are in risk of developing tuberculosis whereas 45 (90%) said family and the person close to infected person, more than half (54%) said that people with HIV/ AIDS, 23 (46%) said elderly and malnourished people, 22(44%) said that people working at TB treatment centre had risk of developing tuberculosis.

Table 14 Knowledge about risk of developing tuberculosis

Characteristics	Number	Percentage
Risk of Developing Tuberculosis		
Family and person in close contact to patient.	45	90
Elderly	23	46
People with HIV/ AIDS	27	54
School Children	15	30
Smokers	48	96
Malnourished people	23	46
People working at TB treatment center	22	44
People who are not in contact with TB patient	9	18

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The Table 15 reveals in regard to the detection of the tuberculosis, majority (94%) of the respondents said that sputum test and chest X-ray helps to detect tuberculosis, 45 (90%) said on the basis of sign and symptoms. Only 5 (10%) respondents had heard about mountex test. Among them, 2 (40%) said that skin is taken as the sample unit for mountex test as well as 2 (40%) said blood as sample.

Table 15 Knowledge about diagnostic features of TB

Characteristics	Number	Percentage
Detection of Tuberculosis		
Sputum test	47	94
Blood test	38	76
Chest X-ray	47	94
Based on sign and symptom	45	90
Mountex test	14	28
Heard about mountex test		
Yes	5	10
No	45	90
If yes, sample for Mountex Test		
Skin	2	40
Blood	2	40
Urine	1	20

Knowledge about treatment of tuberculosis

The Table 16 describes that all (50) of the respondents said that tuberculosis is curable disease. More than two third (78%) knew the patients should not be admitted in hospital to receive treatment.

Table 16 Knowledge about Curability of Tuberculosis

Characteristics	Number	Percentage
Tuberculosis is		
Curable disease	50	100
Non curable disease	0	0
Patient should be Admitted in Hospital for Treatment		
Yes	11	22
No	39	87

The Table 17 shows that more than half (56%) had heard about DOTS for the treatment of tuberculosis. Among those, 14 (28%) knew that DOTS is taken for 6-8 months. Regarding the availability of anti-tubercular drugs, 34 (68%) reported that it is found at DOTS center at free of cost and 24 (48%) said it is found in hospitals at free of cost.

Table 17 Knowledge about DOTS

Characteristics	Number	Percentage
Heard about DOTS		
Yes	28	56
No	22	44
Duration of treatment by DOTS		
4-6 months	6	12
6-8 months	14	28
8-10 months	7	14
10-12 months	1	2
ATT given at free of cost*		
Hospitals	28	56
DOTS centre	34	68
Pharmacy	1	2

The Table 18 shows that about one fourth (26%) of the respondent reported that DOTS centre is found near to their residence. Among these, nearly half of the respondents mentioned that they reach the DOTS centre within 30minutes by walking and almost all of the respondents reach within 15minutes by transportation.

Table 18 knowledge about availability of DOTS

Characteristics	Number	Percentage
DOTS Center Available near the Residence		
Yes	13	26
No	37	74
If yes, Time to Reach there by Walking		
0-15 minutes	6	46
15-30 minutes	6	46
30 and more	1	8
By means of Transportation (n=13)		
0-15 minutes	12	92
15-30 minutes	1	8

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The Table 19 shows that all (50) of the respondents said that it is necessary to complete the full course of treatment. And the respondents were questioned why it is necessary to complete the full course of treatment, all of the respondents said to cure the disease completely, majority (98%) said to prevent the recurrence of the disease. Similarly, 33(66%) said to finish the dose prescribed by the doctor and more than half (56%) said that it is needed to prevent drug resistance. All (100%) of the respondent said to continue medicine with proper diet, almost all (98%) of the respondent said to go for regular check up.

Table 19 Knowledge about regimen of DOTS

Characteristics	Number	Percentage
Necessary to Complete Full Course of Treatment		
Yes	50	100
Causes of Complete Drug Treatment		
To prevent recurrence of disease	50	98
To prevent drug resistance	49	56
To cure disease completely	28	100
To finish the dose as prescribed by physician 33	50	66

Knowledge about prevention of TB

The Table 20 shows that all (100%) of the respondents are faithful on tuberculosis to be prevented. Almost all (96% knew that there is BCG vaccination against tuberculosis. And majority (92%) of the respondents had received BCG vaccination. Regarding preventive measures of tuberculosis, almost all (98%) said that BCG given at birth, majority (90%) said identifying infected person and curing by DOTS , 88% said avoiding sharing utensils used by infected person , 20% said not living with infected person and 4% talked about others like avoiding smoking and right disposal of infected sputum.

Table 20 Knowledge about Prevention of Tuberculosis

Characteristics	Number	Percentage
Tuberculosis can be Prevented		
Yes	50	100
No	0	0
Any Vaccination available against Tuberculosis		
Yes	48	96
No	2	4
B.C.G Vaccination		
Yes	46	92
No	4	8
Preventive Measures of Tuberculosis*		
B.C.G vaccination at birth.	49	98
Identify the infected person and curing by DOTS	45	90
Avoid sharing utensils used by infected person	44	88
Living with the infected person.	10	20
Others (Specify)	4	8

The Table 21 shows that more than half (52%) of respondents believes on anti tubercular drugs that do not create side effects and 48% said that it does have side effects. Among which in regard to the management of anti tubercular drugs, more than half (66%) said calling health workers at home, 100% said teaching patients to recognize the sign and symptoms of common side effects of anti tubercular drugs and also visiting nearby health centre and 255 said that wait to heal the side effects.

Table 21 Knowledge about management of TB

Characteristics	Number	Percentage
Anti Tubercular drugs create Side Effects		
Yes	24	48
No	26	52
Management of Side Effects of Tuberculosis		
Health workers at the home of tuberculosis	16	66
Teaching patients to recognize symptoms of Common side effects.	24	100
Wait to heal the side effects.	6	25
Visiting nearby health centers.	24	100

The Table 22 reveals concerning the spread of tuberculosis by the patients who are already on effective treatment, more than one third (34%) said 'yes', 32% said 'no' and 36% said 'I don't know'. Likewise, regarding the spread of tuberculosis by the patients who have been cured, nearly three fourth (74%) said 'No' and 26% said 'I don't know'.

Table 22 Knowledge about spread to Tuberculosis

Characteristics	Number	Percentage
Treatment		
Yes	17	34
No	16	32
I don't know	18	36
Spread of disease by totally Cured Patients		
No	37	74
I don't know	13	26
If treatment is stopped in the middle course of the Treatment Period, then*		
Disease will relapse.	48	96
It will be difficult to treat the disease	47	94
Patient may die	47	94
Happens nothing	1	2

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Respondents were asked what happens when the treatment is stopped at the middle course of the treatment period, 96% (48) of the respondents said disease will relapse whereas 96% said that it will be difficult to treat the disease and similarly 96% said that patient will die and 2% said happens nothing.

Discussion

However, all the respondents have heard about tuberculosis from various sources, among those, 46(92%) respondents got information from media and teachers, 45(90%) respondents got information from media and teachers each, 45(90%) respondents received from newspaper and health-worker, 40(80%) from family members and 31(62%) received from friends. The information about tuberculosis received by the respondents from various was not adequate to school students for its prevention and treatment. The study conducted by Tanimawo Mo (1999) also indicated for the avocation and need of health education in college syllabi.[9]

This study showed that the respondents were found to be very much confused about the type of tuberculosis. More than three fourth (78%) said that it does not only affect lungs whereas 11(22%) said that it only affects lungs. Less than half (42%) of the respondents knew about pulmonary tuberculosis, 18(36%) knew abdominal tuberculosis, 8(16%) of the respondents knew about bone tuberculosis. The knowledge about tuberculosis is increased after providing health education and developments of useful materials.[10]

The respondents had good knowledge on sign and symptoms of tuberculosis whereas many misunderstanding were found in the route of transmission and diagnostic features of tuberculosis. Concerning the sign and symptoms, the study showed almost all (98%) said chest pain, cough more than 2weeks is the sign and symptoms, 47 (94%) said weight loss of appetite, 45 (90%) said fever at night and night sweat, tiredness, blood in sputum each and 44 (88%) said that 2 or more than 2weeks fever is the sign and symptoms. Regarding modes of transmission of the tuberculosis, majority (82%) said that through infected patient and 39 (78%) said from pregnant mothers. In regard to the detection of the tuberculosis, majority (94%) of the respondents said that sputum test and chest X-ray helps to detect tuberculosis, 45 (90%) said on the basis of sign and symptoms. Only 5 (10%) respondents had heard about mountex test. Among them, 2 (4%) said skin is taken as the sample unit for mountex test as well as 2(4%) said blood as sample. Whereas similar findings were found in the study conducted by Zhonghua Jie He (2003) in china in which the medical students had many misunderstandings about the treatment and diseases condition.[11]

DOTS program as INH therapy has been an effective method to treat the tuberculosis. The respondents had low level of knowledge regarding treatment by DOTS and they had also less knowledge regarding its duration and availability. All (50) of the respondents said that tuberculosis is curable diseases. More than two third (78%) knew that the patients should not be admitted in hospital to receive treatment. More than half (56%) of respondents had heard about DOTS for the treatment of tuberculosis. Among those, 14 (28%) knew that DOTS is taken for 6-8 months. Regarding the availability of anti-tubercular drugs, 34(68%) reported that It is found DOTS center at free of cost and 24 (48%) said that it is found in hospitals at free of cost.[12]

Tuberculosis could have been eliminated by effective treatment, vaccinations and public health measures.[13] The knowledge of the respondents regarding prevention of TB was found to be inadequate.[14] Almost all (96%) knew that there is BCG vaccination against tuberculosis. regarding preventive measure of tuberculosis, almost all (98%) said that BCG given at birth, majority (90%) of respondents said identifying infected person and curing BT DOTS, 88% said avoiding sharing utensils used by infected person. 20% said not living with infected person and 4% talked about other like avoiding smoking and right disposal of infected sputum. Concerning the spread of tuberculosis by the patients who are already on effective treatment, more than one third (34%) of respondents said 'Yes', 32% said 'No' and 36% said 'I don't know'. likewise, regarding the spread of tuberculosis by the patients who have been cured, nearly three fourth (74%) of respondents said 'No' and 26% said 'I don't know'. Respondents were asked what happens when the treatment is stopped at the middle course of the treatment period, 96% (48%) of the respondents said that diseases will relapse whereas 96% said that it will be difficult to treat the diseases and similarly 96% said that patient will die and 2% said happens nothing.

Conclusion

The findings reveal that schooling students of developing countries world still do not have adequate knowledge of tuberculosis. Even through majority of students knew that TB is curable diseases but they are unaware about DOTS therapy, its duration and its availability, and the tests performed to detect TB. Many of the students had not heard about Mountex-test. Therefore there is the need of health teaching with necessary teaching and learning aids regarding TB to the school students. The knowledge should be raised through media, various awareness programmers and inclusion of the topics in syllabus of college students through involvement of parents, teachers and health personnel. Proper knowledge about tuberculosis helps to prevent the spread of TB and management of TB through proper treatment.

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Conflict of interest

The author declares no conflict of interest.

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