Knowledge of Secondary School Students about Pulmonary Tuberculosis in Tikrit City

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Abstract*:*

***Background*:** Pulmonary tuberculosis is epidemic disease it is a one cause of death worldwide it caused by bacteria (*Mycobacterium tuberculosis*) that mostly infect the lungs. Tuberculosis is curable and preventable disease. Transmission of TB is through the air, when person with pulmonary tuberculosis spit, cough, or sneeze, the microorganisms spread in the air. Few germs can cause infection with tuberculosis.
About 1/3 of the population has latent tuberculosis, latent means there is an infection with tuberculosis bacteria but a person still not ill and cannot transmit the disease.
Main objective (aim): The study aimed to evaluate the knowledge of secondary school students about pulmonary tuberculosis.
***Subject and Methods*:** This is a cross-sectional study, done on the secondary school students in Tikrit city at the period of time from first of January to first of April 2016. Cluster sampling chosen then students selected randomly from each cluster. Sample size was 98 students was collected by questionnaire, then summarized and presented in simple tables and figures.
Result: The study found (57.14%) of students were having some information about pulmonary tuberculosis. By education, we were trying to improve their information about the disease and learn the others "who didn't have any information about the disease" By comparison the results were yield by questionnaire, the students respond very well to the awareness seminar.
Conclusions: Students don't have enough information about the disease relation to its epidemiological spread in Iraq. Health education of the students improves their information.
Recommendations: perform a program of health education in schools, universities, for patients and for the general population about tuberculosis.
***Keywords*:** Pulmonary Tuberculosis, Secondary school students.

Introduction:

Tuberculosis (TB) is a communicable disease resulted from the bacterium "Mycobacterium tuberculosis" [(1)]. TB can infect the lungs, in addition to other body organs [(1)]. Infections with TB may be asymptomatic, as a case of latent tuberculosis [(1)]. Latent TB infections may develop to active illness. TB kills half of patients if left untreated [(2)]. Patient with active TB have chronic bloody productive cough, fever with night sweats, and weight loss [(1, 3)]. Weight loss described historically as term "consumption" [(4)]. Other organs can be infected by TB and cause a multiple symptoms [(5)].

Tuberculosis is transmitted through the air particularly from active infected one [(1, 6)]. Active infection occurs mostly in people with HIV/AIDS and smoker [(2)]. Active TB can be diagnosed by chest X-rays, also investigation of body fluids [(7)].

But latent TB can be done by blood investigation, or tuberculin skin test (TST) [7].

Tuberculosis can be prevented by early detection (screening test) specially for people at risk, treatment of cases, as well as immunization with the bacillus Calmette-Guérin (BCG) can decrease the prevalence of TB [8, 9, 10]. High risk group include contacts of people with active TB as household, workplace, and social [10]. Treatment requires usage of different types of antibiotics for long time [1]. There is a problem in treatment which is antibiotic resistance [1].

Recently, 1/3 of the population in the world suspected TB infection [1]. Studies recorded one percent of the population infected newly each year [11]. In 2016, active TB cases were ten millions cause more than million deaths [3] therefore TB is the first cause of death due to contagious diseases [3]. Death from TB in developing countries is more than (95%) of deaths, and more than (50%) in eastern countries [3]. In Asian and African countries about (80%) of people had tuberculin test positive while in United Statesonly (5-10%) [12, 13].

Signs and symptoms:

Tuberculosis often infects the lungs and called "pulmonary tuberculosis" but it may infect any part of the body [5] and called extra pulmonary TB. Both extra pulmonary TB and pulmonary TB may be diagnosed in a person [5]. Clinically TB patient presented with fever, rigor, night sweats, anorexia, weight loss, and tiredness [5, 14], pulmonary TB may accompanied with nail clubbing [15]. Pulmonary infection symptoms include chest pain with productive cough [13, 16]. About (25%) of people asymptomatic who may not have any symptoms [13]. Occasionally, people may cough up small amount of blood, and a "Rasmussen's aneurysm" was rarely recorded which cause bleeding [5, 17], or TB disseminated and known as miliary tuberculosis [4]. Scaring of upper lung lobe often is happened more than lower due to tuberculosis [5]. Active pulmonary TB in (15-20 %) may cause extra pulmonary TB [18, 19]. Other complications of pulmonary TB include pleurisy, meningitis, lymphadenitis, urogenital tuberculosis, also bone and joint infected) [5].

Aim:

This study is aimed to assess the knowledge of secondary school students in Tikrit about pulmonary tuberculosis.

Objectives:

1-Assess the general knowledge of secondary school students about pulmonary TB.

2-Evaluate the impact of health education about tuberculosis among the secondary school students in Tikrit city.

Subjects and Methods:

The study is a descriptive cross-sectional, applied on the secondary school students in Tikrit city.

It carried out at the period of time from first of January till first of April 2016.The sample size was 98 students, in which the ratio of male to female is 1:1. Their age was between 15-19 years Cluster sampling method (4 secondary schools) used then simple random sampling chosen from each cluster.

Data collection was achieved during January 2016 by a questionnaire and information was taken by direct interview. A questionnaire is included general information about age, class, residence, knowledge about causative organism, mode of transmission, the most infected organ, symptoms, type of

sample used for the laboratory diagnosis, treatment, control, and the source of his information about the disease. Information about their knowledge about the disease was taken before and after lecture about tuberculosis (introduced by researchers in each included secondary school) to compare their information. The data presented and analyzed manually with Microsoft office Excel program by computer.

Results:

The study found that 49(50%) of students thought that TB caused by virus before lecture but after education (98.98%) of the students knew that TB caused by bacteria. as in table (1).

In figure (2) there were (58.42%) of students thought that pulmonary TB infection transmitted by air, and others thought it transmitted by food and water.

Regarding student's knowledge about affected organs by tubercles bacilli, before lecture (80.61%) thought lung is affected but after lecture (94.89%) thought that lung is the most affected organ, as in figure (3).

The results showed that (86.73%), (100%) of students before and after education subsequently knew the clinical presentation of pulmonary TB is cough, bloody sputum, night sweat and weight loss.

The study revealed (45%) of students (before education) knew that sputum is the specimen used for pulmonary TB diagnosis, but after education (70%) of students said that sputum is a specimen used for laboratory diagnosis as in figure (5, 6).

Table (1): Knowledge of secondary school students about the causative organism of pulmonary tuberculosis.

Knowledge about cause	Before (total 98)		After (total 98)	
	Number	%	Number	%
Bacterial	37	37.76	97	98.98
Viral	49	50	1	1.02
Fungal	2	2.04	0	0
Parasitic	10	10.2	0	0

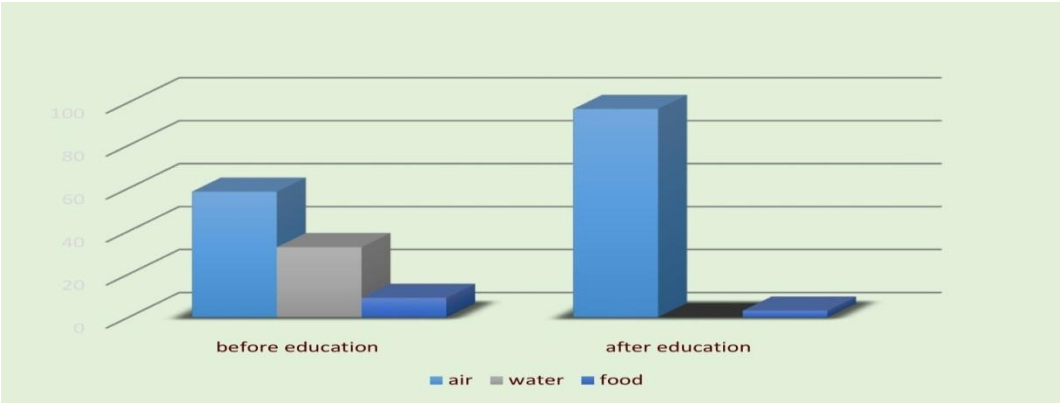

Figure (2): Knowledge of secondary school students about the route of transmission of pulmonary tuberculosis.

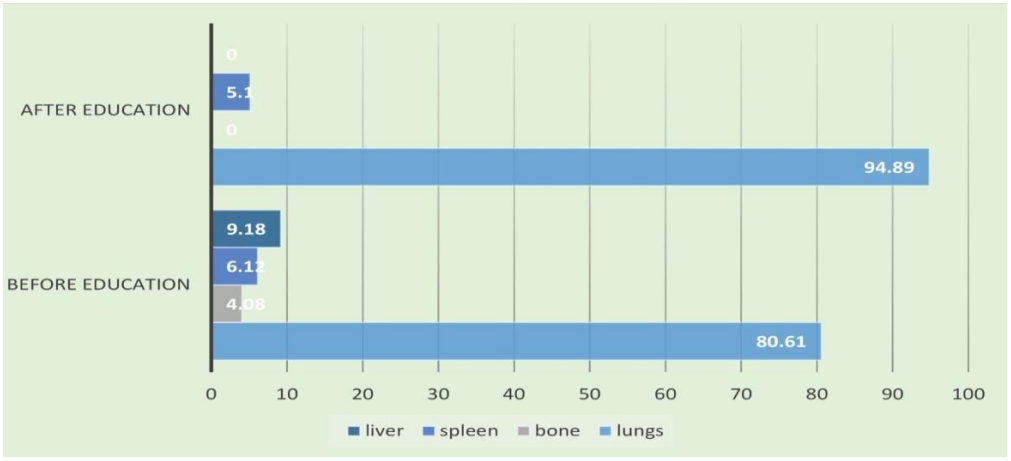

Figure (3): Knowledge of secondary school students about the most commonly affected organ by the tubercles bacilli.

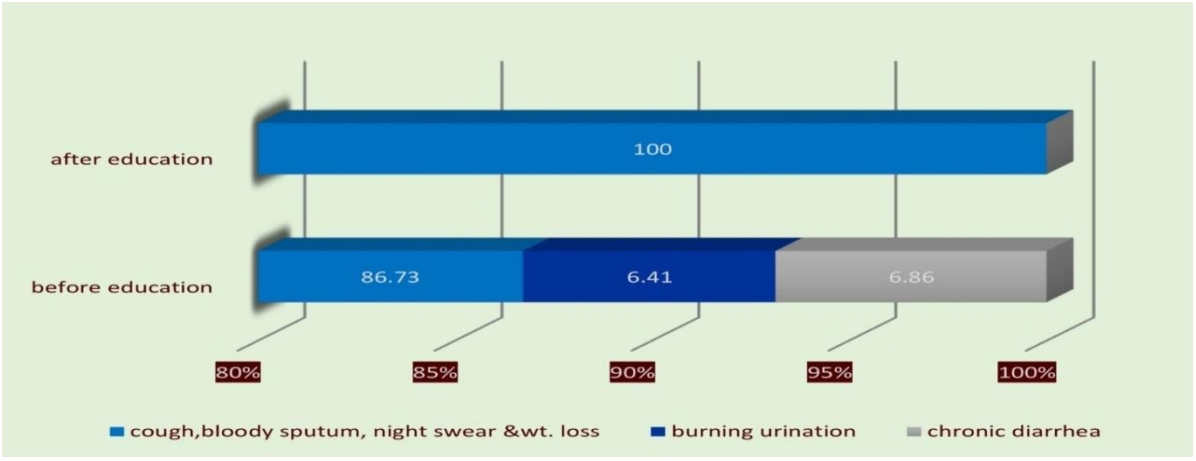

Figure (4): Knowledge of secondary school students about the classical clinical presentation of pulmonary tuberculosis.

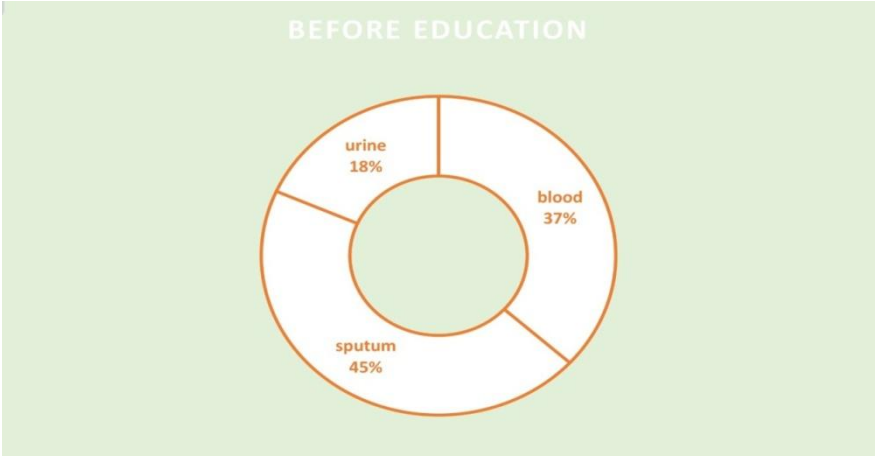

Figure (5): Knowledge of secondary school students about the specimen used for laboratory investigation for the diagnosis of pulmonary tuberculosis before the educational seminar.

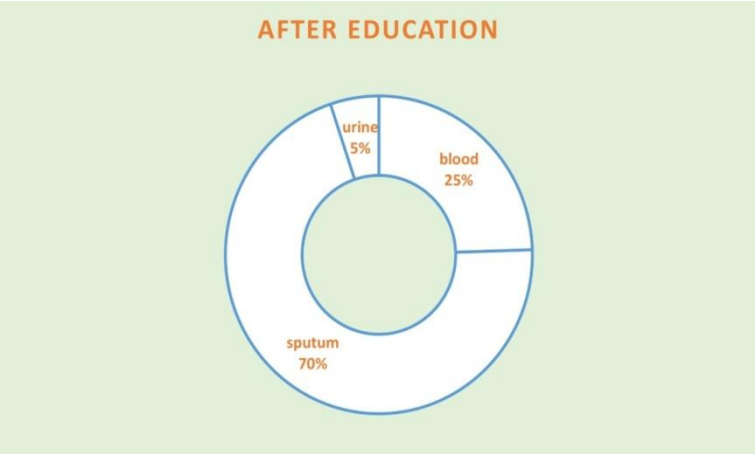

Figure (6): Knowledge of secondary school students about the specimen used for laboratory investigation for the diagnosis of pulmonary tuberculosis after the educational seminar.

Discussion:

TB is a prevalent infectious disease among Iraqi population, many studies carried out in Iraq and other countries [20, 21]. This study carried out in Tikrit city-Iraq shows that most secondary school students know something about TB, and that the knowledge in general is reasonable (37.76%) of students were aware that pulmonary TB is caused by bacterial infection before education about the disease while after education (98.98%) of them know that the disease caused by bacterial infection, this agree with study done in district as they found 26(31 %) believed it was a bacterial disease, 18(21%) a viral disease and 14(16%) that it was a disease attacking the lungs without specifying an infectious etiology [23]. This improvement in knowledgements may be due to a good information about TB was introduced by lectures to students, media of education as internet, radio, posters or leaflets, books, and magazines.

Before education (58.42%) of students knows that air is the route of transmission of pulmonary tuberculosis from infected to non-infected persons, while after education there were (96.93%) know this information. This agree with study done in Mchinji districts they found that 47(55%) students thought that TB was spread through aerosols or through spitting and 34(40%) that it was transmitted through drinking unpasteurized milk or eating meat [23].

There were (80.61%) of students (before education) know that lungs are the most commonly targeted organ by the tubercles bacilli but after education (94.89%) of them know that. This high percentage may be because the research question specified about pulmonary TB therefore most of students expect the answer that lung is the affected organ.

Before education (86.73%) of students know the classical clinical presentation of tuberculosis (chronic cough, bloody sputum, night sweating and weight loss). After education all of them aware that. When comparing the results of the present study with those conducted in Africa, the level of knowledge in Tikrit students was significantly higher than African [23].

There were (44.99%) of students know the specimen used for laboratory diagnosis of TB is sputum before

education, while after education, (70.4%) of students recognized that. Over two thirds of students knew someone with TB this may be increased knowledge of students about diagnostic method.

Conclusions:

1. Students don't have enough information about the disease in relation to its epidemiological spread in Iraq.
2. Health education of the students gives good information about pulmonary tuberculosis.

Recommendations:

For Iraqi Ministry of Health: perform a program of health education in schools, universities, for patients and for the general population about tuberculosis and other endemic diseases.

For Medical student: Encourage this type of projects because it contributes in the awareness of the community about the endemic diseases in Iraq and how it transmitted, diagnosed, treated, and prevented.

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