



# Knowledge and attitudes towards tuberculosis among secondary school students in rural areas in Hormozgan, Southern Iran

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## ABSTRACT

**Introduction:** Tuberculosis (TB) is one of the most important causes of mortality and morbidity in developing countries and is responsible for about 25% of all preventable deaths. Therefore we aimed to assess the knowledge and attitude towards TB among guidance school in rural areas of Bandarabbas in 2010.

**Methods and Materials:** In this cross sectional study our samples were selected using cluster sampling. All of the 81 participants completed a standard TB attitude and knowledge questionnaire. The questionnaire included 16 questions concerning knowledge and 9 questions regarding attitude towards TB. Data was entered the SPSS 13 software and analyzed using the descriptive statistics.

**Results:** Eighty one students were enrolled in this study. Among them, 41 (50.6%) were male and 40 (49.4%) were female. The mean age of the participants was  $12.67 \pm 1.5$  years. Almost all of the participants knew the signs and symptoms, ways of transmission and prevention methods of TB. Most of the students, 48 (59.3%), had received TB related information by television.

**Conclusions:** Our results demonstrated that knowledge toward TB is high among these students. The most important source of information of the students was television, therefore we suggest to improve the quality and number of television's educational programs in order to increase the students' knowledge, introduce the TB support centers, and changing the attitude and behavior of health staff.

**Keywords:** Tuberculosis, attitude, knowledge.



### Introduction:

Tuberculosis (TB) is one of the most important causes of mortality and morbidity in developing countries and is responsible for about 25% of all preventable deaths (1). The incidence of this disease has increased from 8.8 million cases in 1995 to 11.9 million cases in 2005 (2). In 2008, 9.4 million new cases of TB and 1.3 million TB related deaths were reported (3). Almost 8 million new cases of TB and 2 to 3 million TB related deaths are being reported worldwide, every year (4). Every second, one person gets infected with tuberculosis and each 10 seconds one patient dies from this disease (5, 6). Each patient can infect 10 to 15 people (7).

Therefore, tuberculosis is still a major threat to the global health. The World Health Organization (WHO) distributed it as an emergent disease in the world in 2000 and recommended to control this disease (8, 9). Despite the suitable rural and urban health system in Iran, the risk of TB still exists. One possible explanation may be Iran's neighborhood with Afghanistan and Pakistan, which have a high prevalence of TB (8, 10).

Treatment of TB is important to prevent its transmission. Although TB caused by sensitive bacilli is always treatable with appropriate antibiotic treatments, sometimes Multi Drug Resistant (MDR) bacilli lead to incurable disease (11, 12). The most common cause of treatment failure of TB is because of irregular drug usage (13). There are many barriers that lead to unsuccessful control of TB, including late diagnosis, undiagnosed TB and lack of a careful follow up. Also, it has been shown that the best

drug regimens that aren't used correctly are ineffective and worthless (14).

Dear et al showed that only 60% of the patients that were enrolled in their study, followed the treatment to end (15).

Previous studies showed that lower patient knowledge regarding the clinical manifestations, transmission and control methods of TB leads to a higher annual incidence of TB (16-20). Wand Walo et al showed that only 30% of TB infected patients had good knowledge towards TB, its transmission and prevention methods (16). Portero et al reported that the general population's knowledge towards different aspects of TB is little (17).

Despite the high frequency of TB in Vietnam, China and Rwanda, 3 studies have showed that the general information regarding TB is low in these countries (18-20). Therefore we aimed to assess the knowledge and attitude towards TB among guidance school in Bandarabbas rural areas in 2010.

### Methods:

In this cross sectional study we evaluated the attitudes and knowledge of students in guidance schools of rural areas of Bandarabbas towards tuberculosis. We used the standard TB attitude and knowledge questionnaire which was translated into Persian.

Samples were selected by cluster sampling. All of the 81 participants first completed a checklist regarding the demographic characteristics and then filled the questionnaire. The questionnaire included 16 questions concerning knowledge and 9 questions regarding attitude towards TB.



Students who didn't want to participate in our program were excluded from this study.

Collected data was entered the SPSS 13 software and analyzed using the descriptive statistics including frequency, mean, standard deviation and percentage.

### Results:

Eighty one students were enrolled in our study. Among them, 41 (50.6%) were males and 40 (49.4%) were females. The mean age of the participants was  $12.67 \pm 1.5$  years and ranged between 11 to 14 years. Among the parents of the participants, 23 (28.4%) were unemployed, 10 (12.3%) were employee, 16 (19.8%) were self-employed, 11 (13.6%) were farmers, 5 (6.2%) were ranchers, and 16 (19.8%) had other jobs.

Distance from the nearest health center was 0-10 kilometers in 41 (50.6%), 11-20 kilometers in 26 (32.1%), 21-30 kilometers in 10 (12.3%) and more than 30 kilometers in 4 (4.9%) of the patients. To receive health services, 35 (43.2%) of them preferred to go to clinic to receive health services and 35 (43.2%) preferred to go to the doctor's office and only 3 (3.7%) selected self-treatment. No one selected traditional treatment for TB.

The participants were asked about the number of times they go to a clinic or a hospital each year, and 46 (56.8%) said they visit a clinic or hospital twice a year, and only 1 (1.2%) stated he/she doesn't visit a physician. Most of the students, 48 (59.3%), have received information regarding Tuberculosis by television. Among the participants, 55 (67.9%) stated that Tuberculosis is very dangerous and 3 (3.7%) of them stated that it isn't dangerous.

Although 55 (67.9%) of them believed that tuberculosis is a serious threat, 5 (6.2%) of them didn't think it is a dangerous disease. Thirty eight (46.9%) participants also thought that hemoptysis is a symptom of tuberculosis but only 1 (1.2%) of them chose fever without cause as a symptom, 1 (1.2%) selected chest pain and 1 (1.2%) selected dyspnea as a sign of this disease.

Almost all of the participants believed that tuberculosis is transmitted by breathing the air that was previously polluted by the coughing or sneezing of an infected patient, 1 (1.2%) chose handshake and 1 (1.2%) chose other ways of transmission. Many participants, 46 (56.8%), believed that covering the nose and the mouth while coughing or sneezing stops the transmission of tuberculosis and only 3 (3.7%) chose worship as a way of preventing TB.

Most of the participant, 51 (63%), believed that everyone can be infected by tuberculosis and only 1 (1.2%) of the students thought that only homeless patients are at risk of tuberculosis infection. Regarding the best way of treatment of TB, 33 (40.7%) of the students thought that TB can only be treated by drugs while 4 (4.9%) thought that tuberculosis can be treated by resting and without drugs.

Also, these students answered another question regarding their feelings after being infected with TB. Among the answers, 41 (50.6%) of them said that if they were infected by TB, they would panic, 29 (35.87%) said that they would be disappointed and 7 (8.6%) said that they would be ashamed and depressed.

Most of the students selected physicians or health staff to talk about their disease while 34 (42%) preferred to talk to their parents. Only 5



(6.2%) declared that they wouldn't speak to anyone if they were infected with TB.

Among the participants, 44 (54.3%) said that if they find signs and symptoms of TB in their selves they would go to a health center while 1 (1.2%) of them thought that not going to a physician would be the better option.

In answer to the question; why wouldn't you go to a health center?, 29.6% said "because I don't know where I should go", 22.2% said that they don't trust the health staff, 14.8% said that the reason is the far distance, 12.3% said that visiting the health center would be expensive, 8.6% said that they don't want to accept that they are sick and only 1.2% of them said that they don't like the health staff's attitude and behavior.

Regarding the treatment costs, 29 (35.8%) of the participated students said that it is expensive while 28 (34.6%) believed that it is fair. Only 13 (16%) of the participants said that they knew people who were infected with TB.

in answering to the question "how do you feel towards TB patients, 25 (30.9%) of the participants said that they don't have any feeling towards them, 20 (24.7%) of the students felt sad for them and would like to help them, 19 (23.5%) sympathized with them but didn't want to be in contact with the patients, 10 (12.3%) said that they are afraid of these patients because they might get the disease from them. Only 1 (1.2%) said that it is not my problem because they will never be infected with TB. Also, 33 (40.7%) of them believed that most of the people are kind and friendly with these patients but want to be far from them.

Regarding the relation of TB and HIV, 55 (67.9%) of them thought that HIV infected patients are susceptible to infection with tuberculosis but most of them, 43 (81.5%). About 67 (82.7%) of the participated students didn't have enough information about TB and 62(76.5%) liked to get more information regarding it. Among them 40 (49.4%) preferred to use television while 49 (60.5%) preferred health staff to get information.

Also in a question that asked about the reason of their fear of TB, 43 (53.1%) of the students said that they fear of rejection in Society, 21 (25.9%) said that fear of the disability caused by TB and 17(21%) said that TB would kill them.

#### **Conclusion:**

Our results demonstrated that knowledge toward signs, symptoms, methods of transmission and ways of prevention is high among these students. Also, most of them understood that the best way to treat TB is to visit the health center or the doctor's office to confirm the diagnose and receive the drugs and health services. The most common reasons of not going to the health centers was that they didn't know much about TB supporter centers, and that they didn't trust the health center staff. These problems can be solved with educational program.

Most of the students didn't have positive attitudes towards TB. Educational programs can change the students' attitudes toward TB. More than half of the students understood their lack of information and they were interested in getting more information. Therefore educational programs should be conducted on these students. The most important source of information for the students was television.



Other studies also confirmed this finding (21). Therefore we suggest to improve the quality and number of television's educational programs to increase the students' knowledge and to change their attitudes towards TB.

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