

THE LEVEL OF KNOWLEDGE OF TUBERCULOSIS PATIENTS ABOUT DISEASE AND THE SOCIETY'S ATTITUDE TOWARDS TUBERCULOSIS PATIENTS IN TURKEY

Murat Yalcinsoy¹, Sinem Gungor², Ilknur Dilek³, Ethem Unver⁴, Ferhan Ozseker⁵, Cagla Uyanustakucuk⁶, Belma Akbaba Bagci⁷, Mevhibe Esen Akkaya⁸

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ABSTRACT: INTRODUCTION: We aimed to investigate of patient's knowledge, attitude and behavior about tuberculosis and society's attitude towards tuberculosis patients. **MATERIALS AND METHODS:** The patients were asked to answer a questionnaire regarding their knowledge about tuberculosis that is composed of 14 questions (general, infectivity, diagnosis, treatment; 3-3-3-5 questions respectively) in the first hours of their hospitalization and the answers were evaluated. **RESULTS:** 145 tuberculosis patients (female/male, 46/99; mean age 35, 6±13, 7) were enrolled in the study. The ratio of the patients who knew the disease was contagious, transmitted by saliva driblets and tuberculosis vaccine prophylaxis was 84%, 83%, and 95% respectively. Eighty-two percent of patients knew about the tests necessary for the diagnosis correctly. Eighty-one percent of patients knew the tuberculosis treatment would take 6-9 months with four different drugs. In society's attitude questions, 35% patients that declared they were struck professionally by their disease, 37% of patients answered as "my relations with my work friends went downhill ", 42.9% of patients answered as "I was afraid of getting fired", 14.3% of patients answered as " I got fired". **CONCLUSION:** The preliminary information of the participating patients was approved good enough by a total information score of 80.4±16.1%. Although the patients knowledge level were high, because of problems faced by the society suggests that education should be given more importance. **KEYWORDS:** Tuberculosis, survey, knowledge score.

INTRODUCTION: As a chronic disease like other chronic diseases, tuberculosis affects the social life and mood resulting in distortion of social relationships. The inadequacy in the cooperation of treatment affects the morbidity and mortality, raises the treatment cost and lowers the quality of life. Informing the patient and family about the disease, treatment methods, changes in diet and daily activities results in higher patient cooperation and thus success.^[1] The educational programs aiming to raise the knowledge and to correct the settled misinformation about TB, as in all other chronic diseases, would aggravate social sensitivity.^[2-3]

In our study, we made a survey about TB to the hospitalized patients with a prediagnosis of TB. The aim of this survey was to assess the knowledge of the patients about TB and to determine the shortage of knowledge and society's attitude towards tuberculosis patients as a pioneering element for further educational programs.

MATERIALS AND METHODS: Our study was carried out in a tertiary care hospital in Istanbul, Turkey.

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Election of the Patients: Patients who were hospitalized with a prediagnosis of TB and ARB positive sputum were enrolled in the study. Tuberculosis patients with default, failure, transfer out, extra pulmonary tuberculosis and the MDR TB patients were excluded from the study in order to affect the mean average knowledge level.

STUDY PLAN: The patients were requested to fill in a form containing questions about demographic data and tuberculosis immediately after their hospitalization. The patients were asked "do you know anything about tuberculosis?" before they were requested to fill in the survey forms. All the patients were evaluated by the same interviewee.

The patients were directed only the questions and the multiple-choice answers, no influence took place. The questions, which are not understood, were explained unbiased. The questionnaire was filled in a separate proper place to prevent patients' influencing each other.

No ethical approval was needed for this study as our questionnaire did not involve any intrusive questions. Patients were provided with information about the study and their verbal consent was obtained.

QUESTIONNAIRE: Demographic questionnaire was consisted of questions oriented for personal characteristics, such as sex, age, level of education, profession and additional disease history.

TB questionnaire was consisted of 14 questions oriented for general knowledge about TB, symptoms of the disease, infectivity, diagnosis, treatment, directly observed treatment (DOT) method and prophylaxis against disease. The study participants as in other studies prepared the questions evaluating the knowledge about TB, since there is no standard national questionnaire. [4,5]

The information booklets prepared and given to the patients by Istanbul tuberculosis dispensary (TD) were used to form the questions. The questions were prepared consisting of difficulties in patient follow-up. Six of the questions were multiple-choice questions. Eight of the questions were in true/false format. 15th and 16th questions of the questionnaire were about the behaviour of the family and his work friends after the diagnosis for obtain society's attitude towards tuberculosis patients. The medical terms in the survey were simplified and translated into Turkish so as to be understood by everyone.

Calculating the knowledge Score: In the tuberculosis questionnaire, which is consisting of 14 questions, every true answer was counted as 1 point (limit 0-14). The true answer count was summed up and multiplied by 100, then divided by question number (knowledge score = true answer count * 100/ question number). [3]

STATISTICAL ANALYSIS: The filled in survey forms were evaluated and the results found were recorded by SPSS 11.0 for Windows ® program. Chi square test and definitive statistics were used for the data analysis. $p < 0.05$ was accepted statistically significant.

RESULTS: One hundred and forty-five patients hospitalized in our clinic with a prediagnosis of TB were enrolled in the study. The age of the patients was between 15 and 72, giving a mean average of 35.6 ± 13.7 . 64.1% of patients were married and a main part (51%) was elementary school graduate. The personal characteristics of the patients are at Table 1 in detail.

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The knowledge of the patients about TB: 120 (82.8%) of the patients did know about the TB was infectious via sputum driblet when their knowledge about the disease is inspected. 25 (%17.2) of the patients had thought that it was infectious by way of fork, spoon, clothes and blood products. At Table 2, the patients' true answer ratios to the questions (in a summarized form) in TB questionnaire are shown.

The patients' TB knowledge Score: The total TB knowledge score was found out to be 80.44 ± 16.1 %. When the knowledge score is compared with the personal characteristics; as sex, education and profession; it is found out that those do not have any effect on knowledge score ($p > 0.05$) (Table 3). When the knowledge score was compared with age, it was found out to be negatively correlated. The knowledge score is realized to be low by the older age ($r: -0.25$). Ninety-nine patients had answered the questions about the attitude and behavioral change of the family and friends/work colleagues.

Tuberculosis diagnosis and the attitude and the behaviour of the family.

The question "When you learned that you had tuberculosis disease, what was your family's change of behavior to you?" was answered by 28 (28/99) patients (16, 2%) as "nothing changed", by 67 (67/99) patients (67, 6%) as "showed more interest", by 16 (16/99) patients (16, 2%) as "separated my room and private belongings".

Tuberculosis diagnosis and the attitude and behavior encountered from the friends/ work friends:

The question "How did your disease effect your job?" was answered by 64 (64/99) patients (64.6%) as "nothing changed". Thirty-two (32/64) patients in this group (50%) were still working. Seventeen (17/64) patients (26.6%) were housewives and 11 (11/64) patients (17.2%) were retired or not working. Four (4/64) patients (6.2%) were students.

Among the group consisting 35 patients which answered as "My disease effected my job", 13 patients (37.1%) said that their disease effected the relations with their work friends, 15 patients (42.9%) said that they had anxiety to get fired, 5 patients (14.3%) answered as they were fired. 2 patients (2 %) answered as they resigned from their job by their own will.

The source of the knowledge of the patients about tuberculosis:

The question asked to the patients "Do you know anything about tuberculosis?" before handling the questionnaire, 75, 9% ($n=110/145$) patients answered yes, 24, 1% ($n=35/145$) patients answered no. Regarding the patients' knowledge source about the disease, 11, 7 % ($n=17/145$) patients had a prior history of the TB disease and 17, 2% ($n= 25/145$) had a history of the TB disease in one of their first-degree relationships. The remaining stated that they had learned by the primary care center they had attended prior or by print/visual media.

DISCUSSION: In our study, which was aimed to pioneer the further educational studies, the total knowledge score of the patients having pulmonary tuberculosis was found out to be 80.44 ± 16.1 %. In a public study done in USA, 21.9% of the participants answered that they do not have any idea about tuberculosis.^[4] In our study, the knowledge score of the patients was high. This may be related to the prior information of 75, 9 % of patients.

The patients who had better information about tuberculosis are said to be having a better cooperation with the doctor than the others.^[5] The effect of this high knowledge on the patient

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cooperation and treatment success will be evaluated later, since our study is a preliminary work. Similar studies had also been done among hospital workers. In a study among nurses done by Singla et al., 10.7% of the total nurses and 40.2% of the ones working at TB clinics had been reported to have enough knowledge about tuberculosis.^[6]

When the health care providers' role at the patient education is taken into consideration, this ratio is expected to be higher.^[7] For that reason, not only educating the patients, which is gaining much more importance nowadays, but also educating the health care professionals is important.

When the average knowledge point range of the patients about tuberculosis is evaluated according to the age, sex, profession and education level; it was found out that not sex, profession and educational situation but the age significantly made a difference in knowledge. In a similar study, it was found out that all the female patients had lower knowledge points than the average and as the education level advances, the knowledge point also advances.^[8]

In that same study, the effect of the patients' income level and the hospitalization period on the knowledge level was also investigated and found out that as the income level advances, the knowledge points advance as well. It is known that tuberculosis has a higher incidence rate especially at the societies having lower income rates.^[8-9]

For this reason, the staff who work on such kind of studies think that lower socio-economic groups are at high risk for tuberculosis and those groups should be approached prior regarding the disease prevention and education. In the same study it was found out that the patients hospitalized for a period of 3-4 months having knowledge point over average had a higher percentage (40%) compared with the ones (12%) hospitalized for 1-2 months. This result for long term hospitalized patients was explained by staying longer time with the health care professionals and thus having more informed.

The majority of the patients in our study were determined as elementary school graduates. In another study having the similar results done by Calisir et al., it was found out that 13% was not-literate, 6% was literate, 58% was elementary school graduate, 11% was intermediate school graduate, 5% was high school graduate, 3% was university graduate. This result was noted to be compatible with the general Turkey statistics.^[10]

The knowledge level about TB of our patients was not found compatible with the educational level, unlike the other similar studies. Considering that the patients were informed prior, this result might not reflect the truth. Portero et al., grouped 3970 socioeconomically different people according to sex, age, education level, monthly income level, profession and places they are living. The questions were asked about TB disease to each of the groups. The group having the lower education level and monthly income rate gave true answers significantly low in number.^[11]

Pretty various results were taken for the questions measuring TB knowledge level. Eighteen percent of the patients answered the question right about the organs involved by TB. We received relatively high rate of true answers for the questions concerning the infectivity of TB. Eighty-four percent of patients knew that tubercular was contagious and 77% of patients knew the disease spread from the infected people. The percentage of the patients who knew that the disease is contagious via respiration/sputum driblet was 83%.

In a study assessing the patients' knowledge about the disease done by Ali et al., 82% of 203 TB patients knew that the disease is infectious and approximately half of it knew about the contamination way.^[12]

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In a study involving 236 TB patients done by Tsurkan, it was notified that 40 % of the patients knew nothing about the origin and contamination way of the disease.^[13] In a study carried out in public, only 32% of people answered right to this question.^[5] In a study performed in Philippines involving 3970 people, only 21.4% of the participants answered right.^[11]

One of the basic methods to protect people from tuberculosis is to raise their level of knowledge in the name of the way of infection. In this point of view, the health care professionals should play a role. The infants, the people in close contact in the family, the elderly and the health care professionals are under at high risk concerning the way of tuberculosis infection.^[14]

By the way of informing people plentiful for this disease, not only early diagnosis and treatment would be possible, but also the incidence rate would be low as a result of limiting the infection ways; in that way, the vicious circle between early diagnosis and infection ways would be solved as well.

The question asked to our patients "To vaccinate our children protects them against tuberculosis, true/ fals" format was answered right by 96% of the patients. The reason for that statement was explained as TB being an infectious disease and the general knowledge indicating that the vaccination is a basic and important controlling method for infectious diseases by the study staff.^[15]

The patients' awareness about the symptoms also plays a role in early visits to the health institutions under recurrent circumstances, in early diagnosis of the disease, in prophylaxis of the patient's family and close relations against the disease. In our study, 81% of the patients knew about the TB symptoms. In another study, coughing and expectorating more than three weeks were known as symptoms of tuberculosis by approximately half (53%) of the patients.^[8]

A part of the tuberculosis control programs in a country is diagnosis and treatment phase. In our study, 82% of the patients knew how TB is diagnosed. In another study, only 15.1% of the patients knew exactly the prophylactic ways against TB, 45.3% knew how the diagnosis was made, 88.3% knew the bounden notice for the disease; while nobody knew about the mission of the TD accurately.^[16]

The booklets that TD using to inform the patients was used to form the questionnaire used in our study. For that reason, the patients were asked what they understood from the definition of the disease as described in the booklet, and 86% of the patients gave true answers. Together, when the questions about the infection ways of the disease taken into consideration, we can state that a great majority of our patients would be careful about the prophylactic measures.

The most important factor in the treatment of TB is pharmaceuticals. Being informed about the pharmaceuticals would provide patient cooperation and efficient participation in the treatment. The patients who knew that 4 different drugs would be used for 6-9 months to cure were 81% in our study. In a study done by Ali et al., it appeared that approximately half of the patients knew that the treatment was long-termed and expensive.^[12]

The most appropriate method to fight against tuberculosis is to spread the directly observed treatment strategy (DOTS) nationwide. This strategy is a program to keep tuberculosis under control by appropriate drug combinations and to monitor the patients by health professionals on mandatory time intervals.^[17] In our study, 86.2% of the patients knew about DOT treatment.

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Gelaw et al. conducted a study involving 703 patients with a tuberculosis diagnosis in Ethiopia. In this study, 69% of the patients stated that they were casted out by the society and 78.3% of them stated that it was feared to be in physical contact with the tuberculosis patients.^[18]

In our study, the question “What kind of a behavior change did you face from your family when you learned you had tuberculosis?” was answered by 16.2% of the patients as “ they separated my room and personal belongings”.

In the group consisting of 35 patients that declared they were struck professionally by their disease, 37% of patients answered as “my relations with my work friends went downhill”, 42.9% of patients answered, as “I was afraid of getting fired”, 14.3% of patients answered as “ I got fired”. Every year in our country, first week of January is the week of tuberculosis education and people heavily (through visual and print media and seminars at schools) informed. Our results show that the training was not successful at the desired level.

In a study done in Pakistan by Liefoghe et al., it was shown that the perception of patients for tuberculosis was that it was a very dangerous, infectious and incurable disease. For that reason, they claimed to organize emergency medical educational programs to inform the people about tuberculosis.^[19]

In disease cost studies, the direct and indirect costs, as well as psychological and intangible, immeasurable cost that include factors such as pain, misery, distress, anguish, stress caused by disease is evaluated. Studies are not considered due to the impossibility to calculate them. However, a portion of such effects scales are developed to evaluate and define the form of spending. Rajeswari et al. have taken into consideration this cost. 15% of rural patients and 11% of urban patients reported that because of their tuberculosis disease they were not accepted and not treated well by family members. On account of the economic impact of the illness, 33% of both the rural and urban patients expressed mental anguish.^[20]

As a result, we intended to pioneer the further education programs by determining the information deficits. This was done by means of asking questions about TB and measuring the knowledge level deficit in the hospitalized patients with a pre-diagnosis of TB. Although the patients knowledge level were high, family and work around the problems faced by the society suggests that education should be given more importance.

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AUTHORS:

1. Murat Yalcinsoy
2. Sinem Gungor
3. Ilknur Dilek
4. Ethem Unver
5. Ferhan Ozseker
6. Cagla Uyanustakucuk
7. Belma Akbaba Bagci
8. Mevhibe Esen Akkaya

PARTICULARS OF CONTRIBUTORS:

1. Consultant, Department of Chest Disease, Sureyyapasa Chest Disease and Thoracic Surgery, Training and Research Hospital, Istanbul, Turkey.
2. Consultant, Department of Chest Disease, Sureyyapasa Chest Disease and Thoracic Surgery, Training and Research Hospital, Istanbul, Turkey.
3. Consultant, Department of Chest Disease, Sureyyapasa Chest Disease and Thoracic Surgery, Training and Research Hospital, Istanbul, Turkey.
4. Assistant Professor, Department of Chest Disease, Erzincan University, Erzincan, Turkey.
5. Associate Professor, Department of Chest Disease, Sureyyapasa Chest Disease and Thoracic Surgery, Training and Research Hospital, Allergy Clinics, Istanbul, Turkey.

6. Consultant, Department of Chest Disease, Yildirim Beyazit Training and Research Hospital, Ankara, Turkey.
7. Consultant, Department of Chest Disease, Yedikule Chest Diseases and Thoracic Surgery Training and Research Hospital, Istanbul, Turkey.
8. Associate Professor and HOD, Department of Chest Disease, Sureyyapasa Chest Disease and Thoracic Surgery Training and Research Hospital, Istanbul, Turkey.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Murat Yalcinsoy,
Baglarbasi mah,
Ataturk Cad, Maral sok,
Yunus emre, Apt No. 7/7,
Maltepe/Istanbul/Turkey.
Email: mrtyalcinsoy@yahoo.com

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