

ORIGINAL INVESTIGATION

Knowledge Level of Family Physicians about Tuberculosis and their Attitudes and Views Regarding their Willingness to Work at a Tuberculosis Dispensary

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Abstract

OBJECTIVES: Upon transitioning to the family medicine system in Turkey, the number of tuberculosis dispensaries (TDs) was reduced, and important responsibilities have been given to family physicians in tuberculosis (TB) control. Furthermore, with the new system, the incomes of doctors working at TDs remained quite lower than those of family physicians. The primary aim of this study was to examine whether family physicians possess the necessary level of knowledge regarding TB, and the secondary aim was to evaluate the attitudes and views of primary care physicians regarding working at TDs because of this economic inequality.

MATERIAL AND METHODS: A questionnaire consisting of 15 questions that measures the basic knowledge regarding TB and that evaluates the role of family health centers in TB control and the willingness of doctors to work at TDs was presented to family physicians in the city of Sakarya.

RESULTS: Of the 84 family physicians that participated in the study, 43% did not have sufficient knowledge about diagnosis, 56% about medicine information, and 77% about transmission and duration of treatment. In addition, 74% of family physicians stated that TD workers run the risk of infection and that their chances of contracting TB are higher, 90% stated that TD workers should be provided with the same economic conditions as family physicians, and 68% stated that TD workers should be positively discriminated. Half of the participants stated, as it stands, that they do not want to work at a TD, and 31% stated that they would definitely not work at a TD even if TD workers are provided with the same economic conditions as family physicians or they are positively discriminated.

CONCLUSION: To take the national fight against TB to a higher level, we reached the conclusion that it is important that the lack of knowledge of family physicians should be remedied, that TB should be included in their job descriptions, and that TD workers should be provided with the same economic conditions as family physicians.

KEYWORDS: Tuberculosis, tuberculosis dispensary, family medicine, medical knowledge

Received: 11.02.2015

Accepted: 04.05.2015

INTRODUCTION

Tuberculosis (TB) continues to be an important public health hazard in Turkey as well as in the world. TB control has long been a duty of tuberculosis dispensaries (TDs), and TDs continue to successfully fulfill this duty [1-3]. In TB control, in addition to following up and treatment of smear-positive patients/ones having contacted TB, it is extremely important to identify new cases and immediately direct these cases to a TD. The importance of primary care physicians-first center of application for patients is indisputable in identifying new cases. Turkey transitioned to a nationwide family physicians system in 2010, and TDs were reconstructed in 2012 to provide one dispensary per 500,000 inhabitants. Therefore, TDs are shut down in many districts. This increased the workload of family physicians in TB diagnosis and treatment. Additionally, transitioning to the family physicians system has reflected on the National Tuberculosis Control Program, and the surveillance obligation of directly observed treatment (DOT) of patients is assigned from TDs to family health centers (FHCs) (Ministry of Health, circular number 2009/51). This necessitated family physicians that worked in community clinics and that never met a TB patient to frequently contact TB patients because of DOT, to deal with noncompliance to treatment, to examine the people having contacted TB, and following up the side effects of medicines. Certified training programs are conducted for doctors working at 179 TDs currently operating in Turkey [1]. However, for doctors working at FHCs, there is no regular in-service training program beyond their medical training (despite occasional regional training). The primary aim of our study was to examine whether family physicians possess the necessary level of knowledge regarding TB.



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Upon transitioning to the family physicians system in Turkey, community clinic doctors switched to contractual statuses and acquired a better economic income than before. However, these improvements were not provided to TD doctors, and their incomes remained low, which caused experienced and educated doctors involved in the fight against TB to switch to family medicine. This caused problems in some districts about doctor employment in TDs, and the continuity of service was attempted to be achieved with temporary assignments. Furthermore, our secondary aim was to investigate the attitudes and views of primary care physicians regarding working at TDs regarding this economic inequality.

MATERIAL AND METHODS

Before the TB panel that was arranged on the efforts to lower the TB incidence in the province of Sakarya, where TB incidence was very high with the rate of 31 per 100,000 individuals, the family physicians that participated in the study were asked to complete a questionnaire form consisting of 15 multiple choice questions. On the front side of the form, there were seven questions that measured the basic knowledge about TB and that were prepared according to the TB diagnosis and treatment guide of the Ministry of Health. On the back side, there were eight questions that evaluated the role of FHCs in TB control and the views of the participants regarding their willingness to work at TDs (Table 1) [4].

Informed consents were attached to the study forms, and personal/sociodemographic information was not obtained. Answering partially or fully was left to the participants. Approval for the study was obtained from Sakarya University Medical Faculty Ethics Committee.

Statistical Analysis

Data are presented as numerical values and percentages.

RESULTS

Of the 121 actively working family physicians in the city, 84 filled the questionnaire form.

The level of knowledge about TB was evaluated in four groups-diagnosis, contagiousness, medicine information, and duration of treatment-and results are listed in Table 2.

To the question of "How is TB diagnosis made?" 4.76% (n=4) responded as clinical, 15.47% (n=13) as clinical+PPD positivity, 15.47% (n=13) as clinical+radiological, and 57.14% (n=48) as microbiological.

To the question of "How many days after the start of the anti-TB treatment contagiousness is accepted as gone?" 41.66% (n=35) responded as 30 days, whereas 19.04% (n=16) as 45 days.

Questions and their results about medicine and duration of treatment regarding new smear-positive pulmonary TB cases are given in Table 3.

Answering all of the questions that measure the TB level of knowledge correctly is found as 8.33% (n=7).

The second part involved questions about the role and economic states of institutions.

The answers given to the question about the place of FHCs in TB diagnosis and treatment are given in Table 4.

Of the total number of doctors that participated in the study, 32.14% (n=27) stated that "The fight against TB in Turkey should be fought by TDs; FHCs should stay out of this," whereas 55.95% (n=47) stated that "FHCs should participate in certain issues."

In addition, 48.8% (n=41) responded negatively to the question "Would you like to work at TDs, as they stand?" (Table 5).

Moreover, 36.9% of participants (n=31) stated that they would be risking their health if they had to examine TB patients, and 73.8% (n=62) stated that TD workers run the risk of infection and that their chances of contracting TB are higher.

Furthermore, 90.47% (n=76) of family physicians are of the opinion that "TD workers should be provided with the same economic conditions as family physicians," and 67.8% (n=57) are of the opinion that "TD workers should be positively discriminated."

The willingness of doctors to work at TDs after economic inequality is remedied is shown in Table 6.

To the question of "How should the TD personnel be formed if no one wants to work there?" 8.33% (n=7) responded with "temporary assignments by turns," 13.09% (n=11) with "from public health center, by turns," and 67.8% (n=57) with "TD workers should be constant and should undergo special training."

Finally, 96.4% (n=81) of the participants stated that TB is a disease that must be certified.

DISCUSSION

The first goal in the fight against TB is to identify the bacillus-spreading sources early on to break the chain of infection, and the second goal is the removal of these sources with an effective treatment. The World Health Organization recommends developing a national strategy for effective TB control and communicating this strategy across the country and to doctors from all walks of life [5]. With the changes made in the recent years in the health system and the National Tuberculosis Control program in Turkey, new obligations are imposed to FHCs in addition to the actively performed treatment programs via TDs. It is extremely important that the family physicians, whom everyone can reach easily, join this fight as well to increase the rate of finding new cases as well as for DOT surveillance. Our study is planned in a way to measure the level of knowledge of family physicians regarding TB and to demonstrate whether training is required in this issue.

In our study, seven questions that measure the basic TB knowledge were asked, and only 8% of family physicians were able to answer all questions correctly. It is revealed that approximately half of the participant doctors do not have sufficient knowledge about diagnosis and medicine knowledge and that approximately three-fourth of the participant doctors do not properly know about contagiousness and the duration of treatment. When we look at the studies that investigated the TB knowledge level in Turkey, the percentages of having the correct information regarding diagnosis were found to be between 28% and 68%, knowing the mode

Table 1. Questionnaire sample

- How is TB diagnosis made?
 - a) Clinical
 - b) Clinical+PPD positivity
 - c) Clinical+Radiological
 - d) Microbiological
- How many medicines must be administered in a newly-detected active TB diagnosis?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
 - e) 5
- How many days after the start of the anti-TB treatment is contagiousness accepted as gone?
 - a) 15
 - b) 30
 - c) 45
 - d) 60
- Which of the below affects contagiousness?
 - Ventilation of environment.....
 - Removal of used material.....
 - Use of mask.....
 - Sunlight.....
 - Whether patient has coughing and phlegm.....
 - Whether patient is smear (+).....
 - Location of the disease (intrapulmonary or extrapulmonary).....
- Is TB a disease that must be certified?
 - a) Yes
 - b) No
- I would be risking my health if I had to examine a TB patient
 - a) I agree
 - b) I disagree
- What should the role of FHC be in TB control?
 - a) It should have no role
 - b) A role of new case detection
 - c) It should perform public education and informing activities
 - d) It should inform about medicines and their side effects
 - e) It should diagnose and refer
 - f) It should diagnose and treat
- The fight against TB in Turkey should be fought by TDs; FHCs should stay out of this.
 - a) I agree
 - b) I disagree
 - c) FHCs must be involved in certain issues
- As it stands, would you like to work at an FHC?
 - a) I would absolutely not want to work
 - b) I would try my best not to work
 - c) I may work
 - d) Does not matter
- TD workers run the risk of infection and their chances of contracting TB are higher.
 - a) I agree
 - b) I disagree
- TD workers should be provided with the same economic conditions as family physicians
 - a) I agree
 - b) I disagree
- TD workers should be positively discriminated
 - a) I agree
 - b) I disagree
- When TD workers are provided with equal economic conditions as family physicians or when they are positively discriminated, would you like to work at a TD?
 - a) I would work if there was positive discrimination
 - b) I would work if there were equal conditions
 - c) I would absolutely not work
 - d) Does not matter
- How should the TD personnel be formed if no one wants to work there?
 - a) Temporary assignments by turns.
 - b) From PHC, by turns
 - c) TD workers should be constant and should undergo special training.
 - d) Does not matter

FHC: family health center; TD: tuberculosis dispensary; PHC: public health center

Table 2. Knowledge levels of physicians on tuberculosis

Knowledge area	Correct answer %/(n)
Diagnosis	57.14/(48)
Transmission of disease	22.61/(19)
Medication	44.04/(37)
Duration of treatment	22.61/(19)

of transmission were between 21% and 40%, knowing the number of medicine used in the treatment were between 40% and 55%, knowing the correct medicine combination were between 14% and 36%, and knowing the duration of treatment were between 21% and 48% [6-13].

Similar results are achieved in studies that are conducted in countries with high TB incidences. A study conducted in India revealed that only 51% of doctors know the symptoms

Table 3. The results of the questions related to the treatment of new smear-positive pulmonary TB cases

How many drugs must be given for TB?	%/(n)	How many months must TB treatment last for?	%/(n)
One	1.19/(1)	Four	8.33/(7)
Two	5.95/(5)	Six	58.33/(49)
Three	39.28/(33)	Nine	22.61/(19)
Four	45.23/(38)	Twelve	8.33/(7)
Five	8.33/(7)	No answer	2.38/(2)

TB: tuberculosis

Table 4. Views about the duties and responsibilities of FHC in TB treatment

What should be the role of FHC in TB control	%/(n)
It should have no role	5.95/(5)
It should have a role of new case detection	32.14/(27)
It should perform public education and informing activities	67.85/(57)
It should inform on medicines and their side effects	22.61/(19)
It should diagnose and refer	22.61/(19)
It should diagnose and treat	0/0

*Total number is over 100 because of the existence of more than one answer. TB: tuberculosis; FHC: family health center

Table 5. Eagerness of physicians for working at TDs

As it stands, would you like to work at a TD?	%/(n)
I would absolutely not want to work	41.66/(35)
I would try my best not to work	7.14/(6)
I may work	27.38/(23)
Does not matter	19.04/(16)
No answer	4.76/(4)

TD: tuberculosis dispensary

Table 6. Eagerness of physicians for working at TDs

When TD workers are provided with equal economic conditions as family physicians or when they are positively discriminated, would you like to work at a TD?	%/(n)
I would work if there was positive discrimination	20.23/(17)
I would work if there were equal conditions	20.23/(17)
I would absolutely not work	30.95/(26)
Does not matter	23.8/(20)
No answer	4.76/(4)

TD: tuberculosis dispensary

and that only 41% know the diagnosis [14]. In another study conducted in Pakistan, the diagnostic success of general practitioners was measured as 20% and their treatment knowledge as 41% [15]. A difference in age, sex, time in profession, and workplace was not found among doctors in either of these studies, and only the knowledge level of those that acquired training was found to be significantly higher.

When our study was evaluated together with the other studies conducted in Turkey about this issue, it revealed that the level of knowledge of family physicians regarding TB was quite insufficient and that training programs directed towards increasing the level of knowledge must be swiftly planned and implemented. Indeed, in the statement of opinion of the Turkish Thoracic Society on family medicine practice and TB

control, it is stated that community clinics, family physicians, and PHCs, which are the primary healthcare institutions, are inexperienced regarding TB; therefore, they fail to solve problems in diagnosis, to deal with noncompliance to treatment, to perform the examinations of the ones having contacted and prophylactic treatments, and to record and report [16].

It has also been reported that the rates of attendance to a scientific event on TB after graduation were also found to be quite low [7,9]. These results suggest the need for a training program to be conducted by the Ministry of Health.

With the changes made to the structure of the healthcare system, TDs in underpopulated districts are closed, and responsibilities are brought to FHCs in the surveillance of TB patients. In our study, the views of doctors that work in FHCs regarding this additional duty and responsibility were also evaluated. The public education and informing role of FHCs came to the fore in the questions about the place of FHCs in TB control. No participant marked the option "It should diagnose and treat." In the study by Deveci et al., to the question of "what should the role of community clinics be in TB control?" 20% of participants responded with "not very important" and 18% with "only role should be directing to TDs" [9]. These results make one think that not only the lack of knowledge of FHC doctors on TB but also misconceptions about the definition of their job and responsibility must be remedied.

In Turkey, there is still an approximately twofold difference in terms of monthly income between family physicians and doctors that work in TDs [17, 18]. The views of family physicians regarding this inequality were also evaluated in our study. One-third of participants stated that the examination of TB patients was risky, 74% stated that TD workers run the risk of infection, and 68% accepted that TD workers must be positively discriminated. In fact, as things stand, TD workers unfortunately earn lower incomes. This situation is clearly reflected in our study on the willingness to work at TDs, and half of the participants stated that they do not want to work at TDs. The percentage of those that say "I would never work there" fell from 48% to 31% in case economic inequality was fixed. These results show that a significant proportion of doctors do not want to work at TDs even if TD workers were positively discriminated.

The most important duty and acquired success in the national TB control program still belong to TDs and the doctors that work there. We are of the opinion that the economic conditions of TD doctors that are particularly interested in this area and that attendance of necessary training programs must be improved given that they work at a unit that is not popular among other doctors and that runs the risk of disease. In fact, family physicians that do not work at TDs also argued that equal economic conditions must be provided, and 68% of them even argued for positive discrimination because it is a risky department. This issue was emphasized in the 2014 Congress Final Declaration of Turkish National Tuberculosis Fight Societies, and the following opinion was stated: "Workers of TB fight are performing an important job regarding public health, and they run the risk of infection. Economic conditions equal to

healthcare workers in similar positions must be provided to the healthcare personnel working at TB fight; these personnel must even be positively discriminated." In the same declaration, it was recommended that temporary assignments should not be made so that TB fight workers can work in their workplaces constantly and stably [19]. In our study, 22% of family physicians that do not want to work at TDs responded to the question "How should the TD personnel be formed if no one wants to work there?" with "via temporary assignments or by taking turns." However, we maintain that TD workers must be constant, and they must undergo a special training, and this can only be possible by remedying the economic inequality.

Even though names were not included, questionnaires did not include questions with sociodemographic features to resolve the worries about recognition and reproach due to false answers. Even though, compared to prior studies, a relationship could not be found between age, sex, practice time, and the level of knowledge, this can be a limitation of our study. Another limitation of our study was not questioning the trainings that family physicians acquired prior to and after graduation. The strength of our study, however, was the inclusion of 70% of practitioners working in the city center.

In conclusion, to take the national TB fight-which is in a good state, as documented in the World Health Organization's 2011 Global TB control Turkey report, with a 77% new case detection rate and a 91% treatment success in new cases-to a higher level, we reached the conclusion that it is important that the lack of knowledge of family physicians must be remedied, that TB must be included in their job description, and that TD workers are brought to the equal economic conditions as family physicians.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Sakarya University Faculty of Medicine.

Informed Consent: Written informed consent was obtained from participants who participated in this study.

Peer-review: Externally peer-reviewed.

Conflict of Interest: No conflict of interest was declared by the author.

Financial Disclosure: The author declared that this study has received no financial support.

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