

Knowledge about tuberculosis among secondary school Teachers in Baghdad City

Intisar J. Mohammed

M.B.Ch.B. D.M.E.

Abstract:

Background: Teachers and schools play an important role in health promotion. Community awareness in general and in educational teaching staff in particular is of vital importance in combating tuberculosis which is a leading cause of morbidity and mortality in developing countries. Tuberculosis is still a prevalent disease in our country.

Objective: To determine the level of knowledge of secondary school teachers regarding tuberculosis.

Methods: This descriptive cross-sectional study was conducted in Al-Karkh section of Baghdad during the period from November 2015 to April 2016. The sample size was determined at 500 teachers from the total number of 50 schools.

A simple random sampling technique was adopted to select schools from each of the ten sectors; this resulted in a total of 50 schools (25 schools for males and 25 for females). 10 teachers were randomly selected from those schools for a total of 250 male & 250 Female teachers.

The study instrument included multiple choice questions about the cause of the disease, the route of transmission, vaccination, symptoms, availability of treatment, transmission and prevention. The questionnaire was developed by the researcher making use of previous studies and WHO standards.

Results: On average, 50.2% of the questions were answered correctly, only 34.6 % knew that TB was caused by bacteria, 53.6 % knew that TB's first symptom was a cough of more than 3 weeks, 64.2 % knew that TB is associated with loss of appetite & weight loss, 45.6 % knew that TB is associated with fever & night sweats, only 56.6 % of students knew that it is transferred by respiratory droplets, 70 % knew that the first organ most commonly affected by TB is the lung, 46.2 % knew that the TB vaccine is BCG, only 36.6 % knew that sputum examination is used to help identify TB, 59.9.% knew that covering your mouth during coughing & sneezing helps to prevent disease spread, only 35.4% knew that TB treatment is available in all primary health care centers.

Conclusion: More than one third of the secondary school teachers had good knowledge regarding Tuberculosis, also female teachers had a higher level of knowledge than male teachers.

Keywords: Tuberculosis, secondary school teachers, Knowledge.

Introduction

Tuberculosis is re-emerging as a global public health problem and there is a need to have better understanding of the educational communities' perception of the disease to implement better prevention and control. Tuberculosis is a global health problem, an infectious bacterial disease caused by *Mycobacterium Tuberculosis*, first discovered by Robert Koch on March 24th, 1882,^[1] for which he was granted the Nobel Prize in Physiology or Medicine 1905^[2], despite many advances throughout history in the fight against Tuberculosis, it remains a leading cause of morbidity & mortality especially in developing countries.^[1] Schools continuously seen as important avenues for TB health education given the multiplier effect such intervention is likely to have on the teachers, students, their families, communities and others in their environment.

In the Global Tuberculosis report for 2017 published by the WHO, TB is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, ranking above HIV/AIDS. In 2016, there were an estimated 1.3 million TB deaths among HIV-negative people (down from 1.7 million in 2000) and an additional 374 000 deaths among HIV-positive people. An estimated 10.4 million people fell ill with TB in 2016: 90% were adults, 65% were male, 10% were people living with HIV (74% in Africa) and 56% were in five countries: India, Indonesia, China, the Philippines and Pakistan, it is estimated that TB have killed 1.5 million people in 2014 alone, which

is unacceptable in an era where you can diagnose & cure almost every person with TB.^[3]

even though Iraq is not one of the TB high burden countries,^[1] TB remains endemic in Iraq,^[4] and due to Iraq's instability, plus social & cultural practices, TB reporting, diagnosis & treatment efforts remain inadequate.^[4]

Taking a different perspective in the fight against TB, is to tackle primary & secondary prevention, through health education, using schools, colleges & the media to spread the knowledge regarding good health practices that permit early disease recognition & prevent TB spread.^[5]

One of the most important aspects in the fight against TB is to educate the community about its ways of spread & how social factors such as overcrowding and social stigma of TB are important in disease prevention.^[6]

There are no similar studies done regarding TB previously in Iraq, the most similar KAP study was done in Kurdistan in 2011 on 106 teachers, revealed a low knowledge level of teacher regarding communicable diseases as the majority of the teachers responses were very poor.^[7]

a similar KAP study was done in UK in 2012 which included 74 teachers, and showed a lack in knowledge of teachers regarding health promotion and a lack of attention paid to public health priorities^[8]

One of the most important goals to achieve from increasing teachers' knowledge regarding TB is decreasing TB stigmatization as the fear of the social and economic consequences following diagnosis can

make individuals reluctant to seek and complete medical care.^[9]

The objective of this study is to determine the level of the knowledge of teachers regarding TB.

Methods:

This descriptive cross-sectional study was conducted in Al-Karkh side of Baghdad during the period from November 2015 to April 2016. The sample size was determined at 500 teachers from 50 secondary schools.^[10]

A simple random sampling technique was adopted to select 5 schools from each of the ten sectors; all 10 sectors of Al-Karkh side were included, this resulted in collecting a total of 50 schools (twenty five schools for males and twenty five for females).

The teachers were randomly selected from those schools, 250 males & 250 Females, using a systematic random sampling technique by choosing ten teachers from the selected schools., a total of 10 teachers were selected from each school. Teachers were given a self-administered questionnaire in the local Arabic language having a total of 10 multiple choice questions. The study instruments included multiple choice questions about the cause of the disease, the route of transmission, vaccination, symptoms, availability of treatment and how to prevent transmission if a person is infected,^[11] The questionnaire questions were prepared based on the literature review and using WHO guidelines, and approved and given ethical approval by a committee

of the Iraqi Ministry of Health, questions were weighted evenly, teachers who answered 6 or more questions correctly were labeled as having good knowledge, while those who answered 5 or less were considered as having poor knowledge according to the MOH committee recommendation, data was tabulated and analyzed using Microsoft Excel software.

Results:

On average, 50.2 % of the questions were answered correctly, only 34.6 % answered that TB was caused by bacteria, 53.6% answered that TB's first symptom was a cough of more than 3 weeks, 64.2 % answered that TB is associated with loss of appetite & weight loss, 45.6 % answered that TB is associated with fever & night sweats, only 56.6 % of students answered that it is transferred by respiratory droplets, 70 % answered that the first organ most commonly affected by TB is the lung, 46.2 % answered that the TB vaccine is BCG, only 36.6 % answered that sputum examination is used to help identify TB, 59.9 % answered that covering your mouth during coughing & sneezing helps prevent disease spread, only 35.4% answered that TB treatment is available in all PHCC.

Only 37.8% of teachers answered 6 questions or more correctly, however, there was a difference in the percentage of teachers with good knowledge between male & female teachers, as 39.2 % of females, and 36.4 % of males had good knowledge regarding TB.

Table 1. Answer Percentage for each question

	Question	Correct
1	TB caused by Bacteria	34.6%
2	First symptom is cough for more than 3 weeks	53.6%
3	Associated with loss of appetite & weight loss	64.2%
4	Associated with fever & night sweats	45.6%
5	Transferred by respiratory droplets	56.6%
6	First organ affected is the Lung	70%
7	TB vaccine is BCG vaccine	46.2%
8	Sputum examination is used to recognize TB	36.6%
9	Covering mouth while coughing prevents disease spread	59.4%
10	TB treatment is available in all PHCCs	35.4%

Table 2. Level of Knowledge of TB in teachers by gender.

	Males	%	Females	%	Total
Good Knowledge	91	36%	98	39%	189
Poor Knowledge	159	64%	152	61%	311
Total	250	100%	250	100%	1000

Discussion:

Overall, the knowledge of teachers that were part of the study was generally limited, especially considering TB is taught at schools as a biology subject at the third (9th) grade of middle school, it is described in good detail as a biology subject, but as a community health problem, it seems the educational effort is rather lacking as it is more directed towards memorizing words and has no active teaching involvement in health practices.

The increased rate of correct answers in questions related to Tuberculosis symptoms may be due to the respondent answering the questions with an image of a patient with Tuberculosis on their mind (an elderly person who is coughing blood & looks thin & cachexic). This observation is somewhat reassuring as it is the most related to Tuberculosis recognition & transmission, which are the aspects which we want to focus on and have the greatest impact on community health, while at the same time the fact that the question answered most correctly (Q6: First organ affected is the lung) was answered correctly only 70% of the time confirms that there is a considerable gap in health education that needs to be filled.

the respondents had limited information concerning bacteria as a causative agent of TB. Which is more or less similar to other studies done in the Somali region of Ethiopia^[12,13,14], Southwest Ethiopia^[15], as well as the Afar region, Ethiopia^[16], Kenya^[17] and Pakistan^[18]. Keeping in mind that those studies were population based & not based on teacher communities. Poor knowledge regarding the causative agent of the disease may have a negative impact on the patients' attitude towards health seeking behavior & preventive methods as most people with such beliefs may not visit health facilities or may consider other traditional therapy alternatives.

Based on the results of this study, the respondents had basic knowledge about common signs/symptoms of TB, which is in accordance with previous population- based studies in our country^[19], Ethiopia^[16] and the Philippines^[20]. In this regard it was reported that persistent cough, loss of appetite, weight loss, fever & night sweats were common signs & symptoms of TB. This level of community knowledge regarding TB symptoms has an important implication for the TB control program in that it could reduce diagnosis & treatment delay, as well as disease spread.

An important aspect noted in this study is that respondents were more aware of the prevention methods, and methods of TB spread than other aspects of the disease, their level of knowledge was in accordance with studies such as that by Melaku et al in Ethiopia^[12], Accordingly the transfer of TB by respiratory droplets, the lung being the organ first affected by the disease & covering mouth while coughing or sneezing were similarly documented by

other studies in Ethiopia^[12,15] & Pakistan^[21], keeping in mind these studies were population based & included study samples mainly from rural areas.

Respondents in this study had basic knowledge regarding BCG vaccination, this may be related to the family status of the respondent, those who have recently had children and had them vaccinated were more likely to know the answer than those who are single or have older children.

Respondents had limited knowledge regarding the method of diagnosis (sputum examination, and mostly believed that diagnosis required more invasive testing which may lead to increased avoidance of health services for fear of invasive testing.

An important aspect noted in this study is the limited knowledge of the teacher population regarding TB treatment, which reflects an inadequacy of the health promotion system implemented in our region, Especially regarding TB.

Conclusion:

it can be concluded from this study that generally the knowledge of secondary schools teachers is Only 37.8% of teachers answered 6 questions or more correctly, however, there was a difference in the percentage of teachers with good knowledge (6 or more correct answers) between male & female teachers, as 39.2% of females, and 36.4% of males had good knowledge regarding TB.

Recommendations:

TB health promotion in schools should be strengthened on an ongoing basis and in coordination with local TB control departments and district-level Centers for Disease Control and Prevention. There is a need for targeted efforts to educate teaching staff about TB since the teachers can be a major source of information to students

including their own families and others in their circles of influence.

we need to start building coalitions to help design and implement an intensified community TB prevention and control effort, the first step towards that goal would be initiating public awareness campaigns in schools to increase the level of awareness about the growing TB problem.

We should not underestimate the role of schools in teaching that TB is curable and preventable, that the cost of diagnosing and treating TB is almost free in Iraq, the big role they play in reducing stigma, and in helping affected individuals reach diagnostic and treatment facilities.

References:

1. Tuberculosis Fact Sheet N°104". World Health Organization. October 2015
2. Nobelprize.org [Internet]. Sweden: The Nobel Prize in Physiology or Medicine 1905: Robert

- Koch. Available from: http://nobelprize.org/nobel_prizes/medicine/laureates/1905/koch.html .
3. Global Tuberculosis Report 2017 , WHO, http://www.who.int/tb/publications/global_report/en/
 4. Center of respiratory diseases quarterly report of registered TB cases according to age & gender Q1 2015, Baghdad, Ministry of Health
 5. Paul Kielstra ZoeTabary, ed. "Ancient enemy, modern imperative – A time for greater action against tuberculosis". Economist Insights. The Economist Group.(30 June 2014).
 6. World Health Organization;Implementing the WHO Stop TB Strategy: A Handbook for National Tuberculosis Control Programs. Chapter 27, Advocacy, communication and social mobilization ,2008.
 7. Kareem Fatah, Abdulqader Hussein Nazar A. Sheren. Knowledge and Attitude of Teachers about Communicable Diseases in some of Primary Schools in Erbil. Kufa Journal for Nursing Sciences
 8. Sue Dewhirst, Karen Pickett, Viv Speller, Jonathan Shepherd, Jenny Byrne, Palo Almond, Marcus Grace, Debbie Hartwell, Paul Roderick; Are trainee teachers being adequately prepared to promote the health and well-being of school children? A survey of current practice, Journal of Public Health, Volume 36, Issue 3, 1 September 2014, Pages 467–475.
 9. Courtwright A, Turner AN. Tuberculosis and stigmatization: pathways and interventions. Public Health Rep. 2010;125(Supplement 4):34–42.
 10. School health division in Al-Karkh Health Department,Public schools & student's database in Karkh district, Annex 1, 2015.
 11. European center for disease prevention and control, World Health Organization. Surveillance report, Stockholm 2010
 12. Melaku S, Sharma RH, Alemie AG: Pastoralist Community's Perception of Tuberculosis: A Quantitative Study from Shinille Area of Ethiopia. Hindawi Publishing Corporation Tuberc Res Treat 2013, 475605. <http://dx.doi.org/10.1155/2013/475605>.
 13. Gele AA, Sagbakken M, Abebe F, Bjune AG: Barriers to tuberculosis care: a qualitative study among Somali pastoralists in Ethiopia. BMC Research Notes 2010, 3:86. <http://www.biomedcentral.com/1756-0500/3/86>.
 14. Tolossa et al.: Community knowledge, attitude, and practices towards tuberculosis in Shinile town, Somali regional state, eastern Ethiopia: a cross-sectional study. BMC Public Health 2014 14:804.
 15. Abebe G, Deribew A, Apers L, Woldemichael K, Shiffa J, Tesfaye M, Abdissa A, Deribie F, Jira C, Bezabih M, Aseffa A, Duchateau L, Colebunders R: Knowledge, health seeking behaviour and perceived stigma towards tuberculosis among tuberculosis suspects in a rural community in southwest Ethiopia. PLoS ONE 2010, 5:10. doi:10.1371/journal.pone.0013339.
 16. Legesse M, Ameni G, Mamo G, Medhin G, Shawel D, Bjune G, Abebe F: Knowledge and perception of pulmonary tuberculosis in pastoral communities in the middle and lower Awash valley of Afar region, Ethiopia. BMC Public Health 2010, 10:187. <http://www.biomedcentral.com/1471-2458/10/187>.
 17. Liefoghe R, Baliddawa BJ, Kipruto ME, Vermeire C, De Munynck OA: From their own perspectives: a Kenyan community's perception of tuberculosis. Trop Med Int Health 1997, 2:809–821.
 18. Khan AJ, Irfan M, Zaki A, Beg M, Hussain FS, Rizvi N: Knowledge, attitude and misconception regarding tuberculosis in Pakistani patients. J Pak Med Assoc 2006, 56:211.
 19. Yousif KT, Khayat MI, Salman HD: Survey of knowledge, attitude and practices: enhanced response to TB ACSM, Iraq. MEJFM 2009, 7:1.
 20. Christina M, Domingo B, Lisa A: A descriptive study of the knowledge, attitude and practices on tuberculosis among treatment partners of pediatric patients in Tarlac city. PIDSP J 2009, 10:1.
 21. Mushtaq UM, Shahid U, Abdullah MH, Saeed A, Omer F, Shad AM, Siddiqui MA, Akram J: Urban–rural inequities in knowledge, attitudes and practices regarding tuberculosis in two districts of Pakistan's Punjab province. Int J Equity Health 2011, 10:8. <http://www.equityhealthj.com/content/10/1/8>.

*Ministry of Health