



Knowledge of Pulmonary Tuberculosis among the Patients under Anti-Tubercular Therapy

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Abstract

Background: Knowledge on tuberculosis is very important among the patients under anti-tubercular therapy for proper management. **Objective:** The purpose of the present study was to assess the knowledge about tuberculosis among patients attending the DOTS (directly observed treatment, short course) corner. **Methodology:** This cross sectional study was conducted in the DOTs corner of Sylhet MAG Osmani Medical College, Sylhet, Bangladesh and Sylhet Chest Disease Hospital, Sylhet, Bangladesh during the period from June 2011 to November 2011 for a period of six (6) months. All the patients who were diagnosed as case of pulmonary tuberculosis and were treated with anti-tubercular drugs at DOTs corner who attended in the both Hospitals, Sylhet were selected as study population. **Result:** The age of the patients ranged from 18 to 70 years with the mean age of 41.2 (SD± 12.4) years. The age of the male patients were ranging from 18 to 70 years with the mean age of 42.1 (SD: 12.8) years. Among the 194 patients, 90(46.4%) patients had good knowledge and 104(53.6%) patients had poor knowledge about tuberculosis. **Conclusion:** In conclusion, greater efforts therefore need to be undertaken to improve TB control among TB patients through appropriate and sustainable health education. [Bangladesh Journal of Infectious Diseases 2018;5(1):27-31]

Keywords: Knowledge; Tuberculosis; DOTs therapy; KAP study

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Introduction

Tuberculosis (TB) is a major global public health problem in Bangladesh. Nearly one third of the global population is infected with mycobacterium tuberculosis and thus at risk of developing the disease². More than nine million people develop active TB every year and about two million die; furthermore, more than 90% of global TB cases and deaths occur in the developing world, where 75.0% of cases are in the most economically productive age group³. Therefore, early diagnosis and completion of treatment is necessary for total cure and prevents transmission in the community. For better understanding of the TB control program, knowledge of the patients regarding the disease is very important. Attitude and practice, misconception and misbelieves also plays pivotal role in controlling it. Intact, these are the basis of successful TB control program.

Tuberculosis is caused by infection with *Mycobacterium tuberculosis*, which is part of a complex of organisms including *M. bovis* and *M. africanum*⁴. It continues to be the major cause of disability and death worldwide. The estimates of the global burden of disease caused by TB in 2009 were 9.4 million incident cases and 14 million prevalent cases⁵. In 2009, approximately 1.7 million people died of TB. Among 22 High-burden countries (HBC), Bangladesh ranked 6th position⁶. A high proportion (81%) of notified cases were sputum smear-positive in Bangladesh⁷. TB ranks as the eighth leading cause of death in low-and middle-income countries. Proper identification of cases is the pillar of TB control program. Currently this is accomplished mostly by microscopic examination of stained sputum.

TB has reached epidemic proportions in many developing countries, involving third of world population. Every year there are 8 million new TB cases that results in 2~3 million deaths worldwide, making TB the leading killer among infectious diseases⁸. Despite of adequate supply and comprehensive strategy many of our patients do not complete total duration of tuberculosis treatment. Some patients at certain stage of their treatment feel better and stop taking drugs without consultation of physician⁴. Again some of them simply reluctant to go to the nearest center to collect their drugs. Lack of knowledge about the disease and treatment along with wrong attitude & practice may be significant reason behind this. This is the part & parcel of control program of the disease. But unfortunately this part is not properly explored yet. Without exploring knowledge, attitude & practice (KAP) of

a disease, a control program can never be successful⁵. Moreover, extensive search on knowledge, attitude and practice (KAP) study about tuberculosis in north eastern part of Bangladesh also done, and results indicate that without a health education programme, levels of knowledge about the cause and treatability of the diseases are poor. Therefore this present study was undertaken to assess the knowledge about tuberculosis among patients attending the DOTS (directly observed treatment, short course) corner.

Methodology

This was a prospective cross sectional study. The study place was the Department of Medicine of Sylhet MAG Osmani Medical College Hospital, Sylhet. The study duration was six months, from February 2011 to November 2011. Patients who are smear positive pulmonary Tuberculosis attended for sputum examination in DOT's centre of Sylhet MAG Osmani medical college hospital & Sylhet chest disease hospital within inclusion criteria are my study population. Sputum smears positive patients receiving TB treatment under DOTS program for more than 4 weeks with the age group of more than 18 years Consecutive smear positive cases sampling method was used to select 194 patients with smear TB positive findings. Data was collected from the patient who was attending the DOTs corner of Sylhet M A G Osmani medical college hospital and Sylhet chest disease hospital for collecting anti tubercular drugs.

Data were processed manually and analyzed with the help of SPSS (Statistical package for social sciences) 17.0 Version. Quantitative data were analyzed by mean and standard deviation; and comparison was done between the groups by student "t" test. Qualitative data were analyzed as percentage and proportion. Comparison carried out between two groups done by Chi-square test. A probability value (p) of <0.05 was considered statistically significant.

Result

A total of 194 patients with smear TB positive results were selected according to inclusion and exclusion criteria. The age of the patients ranged from 18 to 70 years with the mean age of 41.2 (SD 12.4) years. The age of the male patients were ranging from 18 to 70 years with the mean age of 42.1 (SD 12.8) years. The age of the female patients ranged from 18 to 66 years with the mean age of 39.7 (SD 11.5) years. The mean age of the male

female patients was almost similar ($p>0.05$) (Table 1).

Table 1: Age distribution of the-patients

Study Subject	Age in years	
	Range	Mean±SD
Male (n=128)	18 to 70	42.1±12.8
Female (n=64)	18 to 70	39.7±11.5
Total (n=194)	18 to 70	41.2±12.4

Z test was applied to analyze the data; Z= 1.261; SD= Standard Deviation

Out of 194 patients 122(62.9%) patients knew that TB is not a genetic disease. Out of 194 patients, 133(68.6%) patients knew that TB is infectious disease. Out of 194 patients, 98(50.5%) patients knew that TB is spread by droplet; 42(21.6%) by eating contaminated food, 30(15.5%) by sharing cloth and 24(12.4%) by blood product. Out of 194 patients, 155(79.4%) patients knew that TB is a Curable disease. Out of 194 patients, 98(50.5%) patients knew that TB is caused by germ; as (25.4%) due to malnutrition, 42(21.6%) due to smoking and 7(3.6%) due to other cause. Discontinuation of treatment of TB causes relapse of TB was reported by 101 (52.1%) patients, reinfection was reported by 34(17.5%) patients and other was reported by 59 (30.4%) patients.

Table 2: Knowledge of Patients about Tuberculosis (n=194)

Knowledge of Patients	Frequency	Percent
TB not inherent	122	62.9
TB Contagious	133	68.6
TB Spread by droplet	98	50.5
TB Curable Disease	155	79.4
TB caused by Organism	98	50.5
Discontinuation cause relapse	101	52.1
TB Prevention by Sputum	84	43.3
TB Prevention by Mask	62	32.5
Duration of treatment 6 months	149	76.8
Hospital Main Source of Information	151	77.8

Among the 194 patients, 90(46.4%) patients had good knowledge and 104(53.6%) patients had poor knowledge about tuberculosis (Figure I). Out of 194 patients, 84(43.3%) patients knew that TB is prevented by proper disposal of sputum of the TB patients, 63(32.5%) patients reported using mask by the TB patients, 44 (22.7%) patients reported keeping away from the TB patients and 3(1.5%) patients reported other. Maximum patients knew

that duration of treatment of TB was 6 months which was 149(76.8%) cases followed by 5 months in 27 (13.9%) patients, 4 months in 15 (7.7%) and 3 months or below in only 3 (1.5%) patients.

Table 3: Association of different variables and status of knowledge about TB

Variables	Knowledge		P Value
	Good (n=90)	Poor (n=90)	
Age group			
≤30 years	31 (73.8%)	11 (26.2%)	*p<0.01
31-45 years	47 (48.5%)	50 (61.6%)	
>45 years	12 (21.6%)	43 (78.2%)	
Sex			
Male	67 (52.3%)	61 (47.7%)	*p<0.05
Female	23 (34.8%)	43 (65.2%)	
Residence			
Rural	16 (18.2%)	72 (81.8%)	*p<0.01
Urban	23 (69.8%)	32 (30.2%)	
Education			
Primary & below	53 (35.1%)	6 (14.0%)	*p<0.01
Secondary & above	37 (86.0%)	6 (14.0%)	

The most common source of information about TB was from hospital in 151(77.8%) patients; media and friends each constituted 20(10.3%) patients; and only 3(1.5%) patients' got information from newspaper (Table 2).

Table 3 showed the association of different variables and status of knowledge about TB. Status of knowledge about TB was significantly different between age group ($p<0.01$), sex ($p<0.05$), residential status ($p<0.01$) and educational level ($p<0.01$).

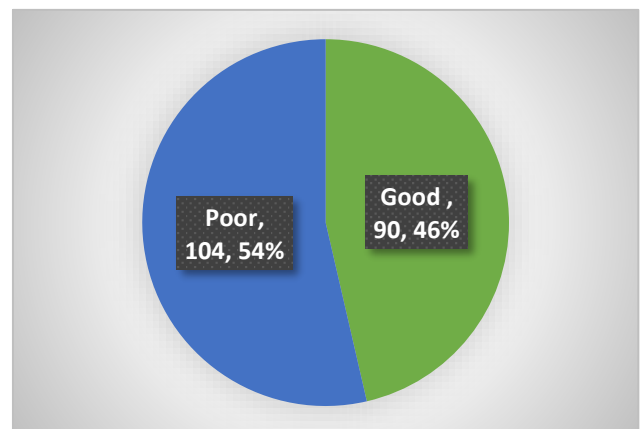


Figure I: Distribution of patients by their knowledge about TB (n=194)

Discussion

A knowledge, attitudes and practices (KAP) survey is a representative survey of a specific population to collect information on what is known, believed and done in relation to a particular topic, in this case TB⁹. KAP survey data are essential to help plan, implement and evaluate advocacy, communication and social mobilization work.

Among the 194 patients, 90 (46.4%) patients had good knowledge and 104 (53.6%) patients had poor knowledge about tuberculosis. Among the 194 patients, 36 (18.6%) patients had good attitudes and practices; and 158 (81.4%) patients had poor attitudes and practices. Date and educated patients had good knowledge, attitude and practice in comparison to female and illiterate patients. Most of the Patients were aware that TB is a highly infectious but curable disease. Despite this fact, a significant number still would not disclose if they were inflicted with the disease for fear of being excommunicated and left out. The relatively poor outcome based on the knowledge among the TB Patients showed that there is a need to implement activities that would educate the public about the disease¹⁰. These activities should put emphasis on the seriousness of the disease, the modes of transmission, the squeal of treatment interruption and the curability of TB¹¹.

Based on this survey, the media, as well as, personal experience were successful means of disseminating information about TB. This survey also found that consults were sought mainly in the hospital and the local health centers. These were promising venues for better detection of TB cases predicting better therapeutic outcomes for patients. This finding also indicated the need to strengthen health education activities through mass media and to foster collaboration between hospitals, local health center and the National TB program. The patients were aware of the different symptoms associated with TB¹². Despite this, the health-seeking behaviors of the patients were not commensurate to their knowledge about the disease¹³.

The study defined five different kinds of delay in TB care and treatment like total delay, patients' delay, system delay and two components of system delay namely providers' delay and services delay. The KAP survey identified the following factors that were associated with the longer delay in seeking TB care and treatment: residence located far from health facilities, lack of awareness or knowledge on TB, older age group, lower

socioeconomic status, and cost of transportation and service fees. In a similar study, comparing the knowledge, attitudes and practices among patients with TB and health care workers showed that the country's national TB program had a good impact on the knowledge of the respondents¹⁴. Correct knowledge and positive perception of the community towards TB and its management is a prerequisite for them to seek early treatment¹⁵.

There are some limitation of study. The study is conducted in urban setting of Sylhet district which may not reflect real scenario of this country. The sample size was small.

Conclusion

The DOTS Program for TB is playing a crucial role but extending the program to more may contribute to better therapeutic Outcomes, Thus Preventing Emergence Of acquired resistance. A Multi-center study should be conducted in other part of Bangladesh involving large sample size to compare knowledge, Attitude and practice (KAP) of TB patients in this country.

References

1. Reid PT, Innes JA. Respiratory diseases (Tuberculosis), In: Colledge NR, Walker BR, Ralston SH (eds). Davidson's principles and practice of medicine. (21st edn), Churchill Livingstone, Elsevier, Edinburgh; 2010:p-688
2. Global Tuberculosis Control. World Health Organization report 2010:1-65
3. Lopez AD. Global burden of disease and risk factors. New York, Oxford University Press and The World Bank 2006: 1-54.
4. Kamga HLF. An evaluation study of the sputum smear concentration technique for the laboratory diagnosis of pulmonary tuberculosis. Afr J Clin Exper Microbiol 2011; 12:22-5.
5. Croft RP, Croft RA. Knowledge, attitude and practice regarding leprosy and tuberculosis in Bangladesh. Leprosy Review. 1999;70(1):34-42
6. Bruchfeld J, Aderaye G, Palme IB, Bjorvatn B, Källenius G, Lindquist L. Sputum concentration improves diagnosis of tuberculosis in a setting with a high prevalence of HIV. Transactions of the Royal Society of Tropical Medicine and Hygiene. 2000;94(6):677-80
7. Sputum Examination for Tuberculosis by Direct Microscopy in Low income Countries. International Union against Tuberculosis and Lung Disease (IUATLD). 5th edition 2000:1-75.
8. World Health Organization Report 2010; Global Tuberculosis Control, WHO Geneva, 2010:1-70
9. World Health Organization. Global Tuberculosis Control: Surveillance, Planning, Financing. WHO Report 2006. WHO/HTM/TB 2006. 362. Geneva, Switzerland; 2006
10. Nelson LJ, Wells CD. Global epidemiology of childhood tuberculosis. Int J Tuberc Lung Dis 2004; 8: 636-47
11. Shafer RW, Kim DS, Weiss JP, Quale JM. Extrapulmonary tuberculosis in patients with human

- immunodeficiency virus infection. *Medicine*. 1991;70(6):384-97
12. Nava-Aguilera E, Andersson N, Harris E, Mitchell S, Hamel C, Shea B, López-Vidal Y, Villegas-Arrizón A, Morales-Pérez A. Risk factors associated with recent transmission of tuberculosis: systematic review and meta-analysis. *The International Journal of Tuberculosis and Lung Disease*. 2009;13(1):17-26
 13. Marais BJ, Hesselning AC, Gie RP, Schaaf HS, Beyers N. The burden of childhood tuberculosis and the accuracy of community-based surveillance data. *The International Journal of Tuberculosis and Lung Disease*. 2006;10(3):259-63
 14. Marais BJ, Gie RP, Schaaf HS, Hesselning AC, Enarson DA, Beyers N. The spectrum of disease in children treated for tuberculosis in a highly endemic area [Unresolved Issues]. *The International Journal of Tuberculosis and Lung Disease*. 2006;10(7):732-8
 15. Molmink J, Garner P. Directly observed therapy for treating tuberculosis. *Cochrane Database Syst Rev* 2006; 2: CDO03343