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Knowledge attitude and practices regarding the pulmonary tuberculosis among the tuberculosis patients, Lahore, Pakistan

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Abstract

Tuberculosis is still a major public health concern in middle and low income states. Lack of knowledge about the cause, risk factors, treatment and prevention of TB is a major challenge to be addressed to reduce disease transmission. A cross-sectional study was conducted at Gulab Devi Chest Hospital Lahore, to assess the level of knowledge, attitude and practices regarding the pulmonary tuberculosis in the patients. The data were collected through purposive sampling technique from 100 pulmonary tuberculosis patients by interview technique to assess patient's knowledge, attitude and practice regarding disease spread and role of nutrition in management of disease through pretested questionnaire. Data were statistically analyzed using SPSS version 21.0. Majority of respondents were aware of the disease spread as 83% were aware of TB spread through coughing and 90% of patients considered cough as symptom of tuberculosis. Only 39% of patients were aware of BCG vaccine and 61% were not aware of the vaccine. The results concluded that patients had knowledge about spread of TB and its prevention. Patient's having the knowledge about benefits of using nutritious foods as well as how to observe hygiene for prevention of disease, but due to some underlying factors they were not following these principles as nobody counseled them about its significance. Majority of respondents have some misconceptions regarding foods that its consumption caused coughing or sputum discharge.

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Introduction

TB has reached the new era with presently chief reason of mortality from a sole contagious mediator, killing over 3 million populace globally yearly, regardless of valuable antibiotics to cure TB (tuberculosis) since the early 1960s (Semba, Darnton-Hill, & de Pee, 2010). In majority of the undersized regions of the globe both malnutrition with tuberculosis are troubles of significant level. Malnutrition can direct to secondary immuno deficiency that elevates the host's vulnerability to disease (Gupta, Gupta, Atreja, Verma, & Vishvkarma, 2009).In Pakistan the basic reasons of morbidity and mortality is Tuberculosis (A. Khan, Walley, Newell, & Imdad, 2000). Pakistan ranked eighth (8^{th}) amongst the countries with higher burden approximately about 44% of tuberculosis epidemic and is considered a public health problem accounting total national disease burden. The occurrence of sputum positive TB cases in Pakistan is 80/100,000 per annum and for the entire types it is 177/100,000 as proposed by World Health Organization (WHO) (Vermund *et al.*, 2009). In 2016, 80% of pulmonary tuberculosis patients were reported to share 61% of the TB burden in the WHO Eastern Mediterranean Region (Atif *et al.*, 2018). Pakistan is listed on number eight among the countries with highest burden of tuberculosis (TB) disease in the world and only Punjab province of Pakistan accounts for 60% of TB disease cases of the nation. In a cross sectional study to investigate knowledge, attitudes and practices about TB disease in common people of two districts of Punjab and the effects of socio-economic determinants, factors such as socioeconomic status were found to have marked effects on knowledge, attitude and practices about TB. Families and communities should be motivated to provide a meaningful support to patients. Health workers and campaigns on television especially in the evening can be suggested as good sources to provide information to public (Mushtaq *et al.*, 2010). Tuberculosis (TB) transfer happens when an infectious sufferer coughs, distributing bacilli by the air. Bovine TB (caused by the intimately linked *M. bovis*) can be spread by utilizing unpasteurized dairy products from contaminated cattle (Roy, 2011). *M. tuberculosis* is mostly spread merely by means of air, not via surface contact. When individuals suffering from pulmonary or laryngeal TB malady cough, sneeze, shout, or sing droplet nuclei might be produced that is M. tuberculosis carrier in airborne particles (Jensen *et al.*, 2005). In the early stages of the pulmonary disease Lymph nodes are mostly effected (Huda, Taufiq, Yusuf, Rahman, & Ferdousy Begum, 2016). The traditional indications of TB are persistent cough with blood-tinged sputum, fever, night sweats, and weight loss. Infectivity of other organs results a broad variety of indications. Pulmonary illnesses are chief providers to morbidity and mortality in the common populace (Kumar, 2011).To lessen the spread of contagious aerosols through contagious sufferers, an extensive low-technology approach is the wearing of surgical face masks. Surgical masks are intended to protect workplace from bacterial contamination, whereas respirators are specifically intended to protect the wearer. Surgical masks and respirators have different obstructive qualities depending upon their functions (Dharmadhikari *et al.*, 2012). Outdoor patients having symptoms of pulmonary tuberculosis are advised to use mask and to prevent outbreak they remain isolated from other patients until disease confirmation (Arias, 2000). To provide protection against air borne microbes; pulmonary tuberculosis respirators instead of mask is recommended by CDC to prevent outbreak (Rhinehart & Friedman, 2005). Knowledge, Attitude and Practice studies help to assess the knowledge attitude of patients further aiding in improving case detection rate. Assessment of knowledge, attitude, and health-seeking practice in this region is essential to plan, implement, and evaluate advocacy, communication, and social mobilization work. This may improve the case detection rate. Studies showed that a low knowledge score was more likely to be observed among the illiterate, females, rural residences, low income, and youngest age group. They also showed that less than half of the respondents were aware of the diagnosis and free treatment of TB, which could act as barriers to TB diagnosis and significantly affect the case notification rate. Furthermore, it has been proven that the disease had a significant impact on social relations. This occurs when there is stigma,

discrimination, and several misconceptions that could contribute to poor adherence and treatment compliance (Esmael *et al.*, 2013). Knowledge on tuberculosis is very important among the patients under anti-tubercular therapy for proper management. Greater efforts therefore need to be undertaken to improve TB control among TB patients through appropriate and sustainable health education (Sagir, Islam, Rashid, Hossain, & Haque, 2018).

Health education directed towards improve knowledge and bringing a change in attitude and practice among non TB patients is needed to create awareness and remove myths about tuberculosis in groups of people in the community (Rathore, Jain, & Dixit, 2017). Lack of knowledge about the cause, risk factors, treatment and prevention of pulmonary TB is a major challenge to be addressed to reduce disease transmission. In a study conducted at Tamilnadu, India with the objective of determining the Knowledge, Attitude and Practices regarding pulmonary tuberculosis in a rural population, study respondents had basic awareness about pulmonary TB but knowledge on cause and prevention was inadequate (Gopalakrishnan & Umadevi, 2018).

The researcher has tried to find out the knowledge, attitude and practices regarding spread and prevention of disease among tuberculosis patients. So that, nutrition education could be provided for awareness, in order to reduce the burden of the disease.

Materials and methods

In this cross-sectional study, the target population was Pulmonary Tuberculosis patients aged above 15 years getting treatment from Gulab Devi Chest hospital Lahore, Lahore. 100 Patients were selected through purposive sampling technique. Data were collected from December 2016 to February 2017 by filling questionnaire through interview technique. Written and verbal consent was taken from patients. Information based on socio-demographic variables such as gender, age, family type, housing type, housing ownership, family income, and qualification were taken. Knowledge about tuberculosis and role of nutrition in managing disease was also assessed.

The collected data were analyzed using SPSS software version 21.0. Descriptive analysis were performed for general frequency of different variables, and Pearson's Chi-square test was applied for testing associations between variables, considering p value(significant) if less than 0.05.

Study Population

The target population was all Pulmonary Tuberculosis patients aged above 15 years getting treatment.

Study Locale

Study was conducted at Gulab Devi Chest hospital, Lahore.

Study Design

A cross sectional study design was opted to determine the knowledge attitude and practices of pulmonary tuberculosis patients.

Sampling and Sample size

Purposive sampling procedure was opted. A sample size of 100 patients diagnosed with pulmonary tuberculosis was selected.

Inclusion Criteria

Adult pulmonary tuberculosis patients presenting at Gulab Devi Hospital Patients willing to participate in the study.

Exclusion Criteria

Patients other than pulmonary tuberculosis Tuberculosis patients receiving treatment at other DOTS implementer health facilities

Data Collection Method

Data were collected from December 2016 to February 2017 by filling questionnaire through interview technique. Written and verbal consent was taken from patients. Information based on socio-demographic variables such as gender, age, family type, housing type, housing ownership, family income, and qualification were taken. Knowledge about tuberculosis and role of nutrition in managing disease was also assessed.

Data Analyses

The collected data were analyzed using SPSS software version 21.0. Descriptive analysis were performed for general frequency of different variables, and Pearson's Chi-square test was applied for testing associations between variables, considering p value (significant) if less than 0.05.

Results and discussion

Out of 100 patients 52 were male, and 48 were females. The patients were between the ages of 15 to 80 years respectively with the mean age of± 40.69 for males and ±39.27 for females. 84% tuberculosis patients belonged to low socioeconomic status, as they were having income level less than ten thousand per month. 66% of the study population was illiterate, only 6% were having high school education. Majority of respondents 88% considered tuberculosis as a serious disease, 90% of patients perceived that TB is curable, whereas 88% of patients responded that TB is preventable. 72% of TB patients covered their mouth with mask to prevent disease spread. Practices regarding food consumption were poor, 40% of respondents were taking regular meals. Only 38% were consuming fruits on regular basis as they were having misconception that fruits may cause sputum discharge, as shown in Fig. 1. In the current study 65% of tuberculosis patients had prior knowledge about the disease and research carried in Ethiopia 83% patients heard of disease (Abebe *et al.*, 2010). The respondents exclaimed that they have heard about the disease through advertisement and most of their parents have disease and 35% heard about the disease when they were diagnosed with tuberculosis. 88% of patients considered Tuberculosis as a serious disease and explained disease as bad, dirty and dangerous disease. The respondents were worried about the disease diagnosis. 90% of patients considered cough as symptom of tuberculosis and 83% were aware of TB spread through coughing, and a research conducted in Vietnam, out of 559 people only 1.6% of respondents were aware of cough for at least three weeks (Hoa, Thorson, Long, & Diwan, 2003). Knowledge about mode of transmission/ spread was assessed among patients. 81% patients knew that TB spread by sneezing, and 52% were aware that TB spread by shaking hands whereas in another study conducted in Karachi majority (84%) knew about cough as a mode of spread for TB whereas 69% thought that TB could spread through sneeze of a TB patient and 61% thought TB may spread by shaking hands (S. J. Khan, Anjum, Khan, & Nabi, 2005).

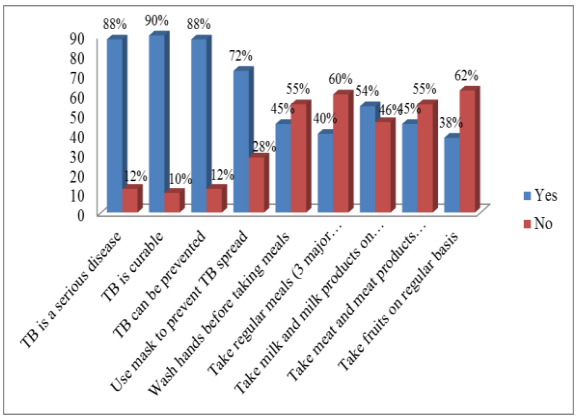

Fig. 1. Knowledge of Pulmonary tuberculosis patients to assess Attitude and Practices.

After assessing the knowledge of TB among patients, there was found a significant association between prior knowledge about TB and gender, p=0.001. Knowledge regarding considering TB as a serious disease was having no significant association with gender (0.168), 48% male and 40% females patients were considering tuberculosis a serious disease. Whereas knowledge regarding considering TB as curable and preventable, were having significant association with gender, having p values less than 0.001 and 0.021 respectively. Considering cough as a symptom of TB was having insignificant (0.062), while perception about preventing TB through use of mask was having significant association (p=0.003) with gender. Also knowledge regarding availability of free treatment for TB and using BCG vaccine for prevention of TB were having insignificant association with gender (P=0.108 and 0.909 respectively), as shown in Table 1. 72% of tuberculosis patients covered their mouth with mask to prevent disease spread. Only 73% of tuberculosis patients knew about X-Ray test to diagnose tuberculosis. 27% of patients were not aware of diagnostic test they exclaimed doctors knew better. 90% of patients

perceived that TB is curable; they said that when they came to hospital disease can be cured. 88% of patients responded that disease can be prevented. Only 39% of patients were aware of BCG vaccine and 61% were not aware of the vaccine. 74% of patients were aware of National Tb program 26% were not aware of the program. A cross-sectional survey was conducted in Eastern Amhara region of Ethiopia to assess the attitude, knowledge and practice of patients about tuberculosis (TB). Results revealed that fifty percent of participants had no information about the free diagnosis and treatment for TB. 69.9% stated that cost is the major reason to avoid treatment (Esmael *et al.*, 2013). In the current study male participants were more knowledgeable as compared to females. Similar results were found in cross sectional study conducted in Ethiopia to educate communities of rural areas about the reasons for the occurrence of the disease and importance of early detection and therapy of TB, especially females and uneducated people (Abebe *et al.*, 2010).

Table 1. Distribution of Tuberculosis Patient's Knowledge According to Gender.

Tuberculosis Knowledge		Male	Female	P-Value
Prior knowledge (Heard) about TB	Yes	26	39	.001
	No	26	9	
TB a serious disease	Yes	48	40	.168
	No	4	8	
TB is curable	Yes	42	48	.001
	No	10	0	
TB can be prevented	Yes	42	46	.021
	No	10	2	
Investigation to diagnose TB	Yes	48	25	.000
	No	4	23	
"Cough" as a symptom of TB	Yes	44	46	.062
	No	8	2	
Free treatment (National) available for TB	Yes	42	32	.108
	No	10	16	
Vaccine BCG to prevent TB	Yes	20	19	.909
	No	32	29	
Use mask to prevent TB spread	Yes	44	28	.003
	No	8	20	

Tuberculosis patients were knowledgeable about disease spread. Male respondents were found to be more knowledgeable as compared to female tuberculosis patients. It is evident from the table also that pulmonary patients were having significant knowledge about mode of disease spread whether it's by sneezing, by shaking hands, by sharing utensils and by sharing towel, having p values 0.003, 0.005, 0.000 and 0.005 respectively. Whereas knowledge about spread of disease by coughing (0.130), by talking (without mask) (0.119) and by sharing bed linens (0.171) were insignificantly associated with gender, as shown in (Table 2). 58% of respondents were aware of the fact that TB spread by talking, 65% were aware of TB spread by sharing utensils, 60% were aware TB spread by sharing towel and 55% exclaimed TB spread by sharing bed linens. A cross sectional study conducted in Karachi revealed that 57% respondents were aware of the fact that separating dishes and not sharing utensils can prevent TB spread(J. A. Khan *et al.*, 2006).

Table 2. Distribution of Tuberculosis Patient's Knowledge Related to Mode of Spread According to Gender.

Tuberculosis Spread		Male	Female	P- Value
By coughing	Yes	46	37	.130
	No	6	11	
By shaking hands	Yes	34	18	.005
	No	18	30	
By sneezing	Yes	48	33	.003
	No	4	15	
By talking	Yes	34	24	.119
	No	18	24	
By sharing utensils	Yes	44	21	.000
	No	8	27	
By sharing towel	Yes	38	22	.005
	No	14	26	
By sharing bed linens	Yes	32	23	.171
	No	20	25	

Conclusions

The current study revealed that tuberculosis patients were knowledgeable but they were not able to implement good nutrition practices in their routine life because of poverty. Male patients were more knowledgeable as compared to female tuberculosis patients. Patients had few perceptions and misconception about tuberculosis disease.

References

Abebe G, Deribew A, Apers L, Woldemichael K, Shiffa J, Tesfaye M, Abdissa A, Deribie F, Jira C, Bezabih M, Aseffa A. 2010. Knowledge, health seeking behavior and perceived stigma towards tuberculosis among tuberculosis suspects in a rural community in southwest Ethiopia. PLoS one ***5*(10)**, e13339.

Arias KM. 2000. Quick reference to outbreak investigation and control in health care facilities: Jones & Bartlett Learning.

Atif M, Anwar Z, Fatima RK, Malik I, Asghar S, Scahill S. 2018. Analysis of tuberculosis treatment outcomes among pulmonary tuberculosis patients in Bahawalpur, Pakistan. BMC research notes **11(1)**, 370. https://doi.org/10.1186/s13104-018-3473-8

Dharmadhikari AS, Mphahlele M, Stoltz A, Venter K, Mathebula R, Masotla T, Lubbe W, Pagano M, First M, Jensen PA, van der Walt M. 2012. Surgical face masks worn by patients with multidrug-resistant tuberculosis: impact on infectivity of air on a hospital ward. American journal of respiratory and critical care medicine **185(10),** 1104-1109. https://doi.org/10.1164/rccm.201107-1190OC

Esmael A, Ali I, Agonafir M, Desale A, Yaregal Z, Desta K. 2013. Assessment of patients' knowledge, attitude, and practice regarding pulmonary tuberculosis in eastern Amhara regional state, Ethiopia: cross-sectional study. The American journal of tropical medicine and hygiene **88(4),** 785-788. https://doi.org/10.4269/ajtmh.12-0312

Gopalakrishnan S, Umadevi R. 2018. Knowledge, attitude and practices regarding pulmonary tuberculosis in a rural area of Tamil Nadu, India: a cross sectional study. International Journal Of Community Medicine And Public Health **5(9),** 4055-4064. DOI: 10.18203/2394-6040.ijcmph20183595

Gupta KB, Gupta R, Atreja A, Verma M, Vishvkarma S. 2009. Tuberculosis and nutrition. Lung India **26(1)**, 9. doi: 10.4103/0970-2113.45198

Hoa NP, Thorson AE, Long NH, Diwan VK. 2003. Knowledge of tuberculosis and associated health-seeking behaviour among rural Vietnamese adults with a cough for at least three weeks. Scandinavian Journal of Public Health **31(62 suppl)**, 59-65. https://doi.org/10.1080/1403495031 001 5121

Huda MM, Taufiq M, Yusuf MA, Rahman MR, Begum F, Kamal M. 2016. Clinico-Demographic Characteristics of Tuberculous Lymphadenitis: Experience of 50 Cases in Bangladesh. Journal of Tuberculosis Research **4(04),** 220. **DOI:** 10.4236/ jtr.2016.44024

Jensen PA, Lambert LA, Iademarco MF, Ridzon R. 2005. Guidelines for preventing the transmission of Mycobacterium tuberculosis in health-care settings, 2005: US Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention Atlanta, GA.

Khan A, Walley J, Newell J, Imdad N. 2000. Tuberculosis in Pakistan: socio-cultural constraints and opportunities in treatment. Social science & medicine **50(2),** 247-254. https://doi.org/10.1016/S0277-9536-8

Khan JA, Irfan M, Zaki A, Beg M, Hussain SF, Rizvi N. 2006. Knowledge, attitude and misconceptions regarding tuberculosis in Pakistani patients. Journal of Pakistan Medical Association **56(5),** 211.

Khan SJ, Anjum Q, Khan NU, Nabi FG. 2005. Awareness about common diseases in selected female college students of Karachi. Journal-Pakistan Medical Association **55(5),** 195.

Kumar R. 2011. Textbook of Pulmonary and Critical Care Medicine.

Mushtaq MU, Majrooh MA, Ahmad W, Rizwan M, Luqman MQ, Aslam MJ, Siddiqui AM, Akram J, Shad MA. 2010. Knowledge, attitudes and practices regarding tuberculosis in two districts of Punjab, Pakistan. The international journal of tuberculosis and lung disease **14(3),** 303-310.

Rathore MS, Jain J, Dixit M. 2017. A cross sectional study to assess the knowledge, attitude and practice regarding tuberculosis among the patients at GMCH, Udaipur (Rajasthan). International Journal Of Community Medicine And Public Health **4(11)**, 4272-4276. DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20174842

Rhinehart E, Friedman MM. 2005. Infection control in home care and hospice: Jones & Bartlett Learning.

Roy SL. 2011. Infectious diseases related to travel. CDC Health Information for International Travel 2012: The Yellow Book 134.

Sagir G, Islam R, Rashid MM, Hossain MA, Haque MA. 2018. Knowledge of Pulmonary Tuberculosis among the Patients under Anti-Tubercular Therapy. Bangladesh Journal of Infectious Diseases **5(1),** 27-31.

https://doi.org/10.3329 /bjid.v 5i1.37713

Semba RD, Darnton-Hill I, De Pee S. 2010. Addressing tuberculosis in the context of malnutrition and HIV coinfection. Food and nutrition bulletin **31(4_suppl4)**, S345-S364. https://doi.org/ 10.1177/ 15648265100314S404

Vermund SH, Altaf A, Samo RN, Khanani R, Baloch N, Qadeer E, Shah SA. 2009. Tuberculosis in Pakistan: A decade of progress, a future of challenge. J Pak Med Assoc **59(4),** 1-8.