Health Care Seeking Behavior of Pulmonary Tuberculosis Patients visiting TB Center Rawalpindi

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Abstract

Objective: To determine the health care seeking behavior of TB patients in seeking care and health care providers for delivering care.
Design:Cross sectional descriptive survey. The interviewers administered a standardized open-ended questionnaire after training and pre-testing.
Setting: Federal Government TB Center, Rawalpindi. (specialized TB clinic).
Subject: One hundred and sixty newly registered TB patients at TB Center, Rawalpindi between 20 November to 21 December 1998.
Results: Prior to their consulting TB Center, 96% patients had already reported to a health care provider, i.e., to first, second or third health care providers. Of 154 patients, 48 were diagnosed as TB and only 29 (19%) of them received antituberculosis treatment. Most of the patients 118 (77%) consulted the health care provider within three weeks time.
Conclusion: Delay is more on part of health care providers than on patients. Proper implementation of collaboration and continuing education of health care guidelines of TB program with public-private sector providers is necessary ØPMA 51:10; 2001).

Introduction

About one third of the world's population is infected by mycobacterium tuberculosis[1]. Tuberculosis is the leading killer of mankind, due to a single infectious agent. About 95% of the TB cases and 98% of the TB deaths are in developing countries[2]. Tuberculosis is one of the major health problems in Pakistan. Like other developing countries, 75% of the cases occur between the ages of 15-50 years, which is the economically productive age group[3].

Grzybowski[4] studied the natural trends of tuberculosis and concluded that in the absence of chemotherapy 50% of the cases die within 5 years, 30% recover spontaneously and 20% remain sputum positive. He also concluded that poor treatment, results in a situation where the number of surviving infectious cases increase in the community and consequently the epidemiological situation can even deteriorate. Functioning surveillance system can give us the magnitude and trend of the incidence of TB disease and allow to monitor the delay in case finding[5].

Despite the availability of effective anti-TB drugs, tuberculosis is not on the decline; on the contary if current trends are not reversed, the annual number of new cases will increase from 7.5 millions in 1990 to more than 10.0 million (estimated) in the year 2000[6].

The purpose of tuberculosis case finding is to detect TB patients as early as possible and to cure them, to cut the chain of transmission of tubercle bacili by strengthening the source of infection[7]. The consequences of late initiation of treatment are: increase in contamination, increase in death rate, increase in human suffering and finally more difficult treatment and increase in expenses. The sequclae of late treatment may handicap the patients and subsequently decrease the productivity. The delay in diagnosis and timely treatment of TB patients can result due to patients' or health care provider, or both.

Patients' delay is the interval between the onset of symptom(s) and the first visit to some health care provider. Health care providers' delay is the interval between the visit to the health care provider and the start of TB treatment. Total delay is the interval between the onset of symptoms(s) and start of TB treatnient.
In Pakistan very little is known about the delays of the patient and health care provider. We have a suspicion that delay could be important because a lot of patients consult various health care providers long after developing the symptoms and various health care providers do not make a correct diagnosis. Few studies have been conducted in Pakistan to determine the health care seeking behavior. This study looked into different patterns of health care resorts as adopted by patients in case of an illness and delay in the process of seeking and delivering care. It examines the health seeking behavior of pulmonary tuberculosis patients, prior to their treatment at TB Center Rawalpindi and delays in seeking and providing health care.

Methodology

Study Design
This is a cross section survey among newly registered pulmonary TB patients attending TB Center Rawalpindi.

Location
The study was conducted at Federal Government TB Center Rawalpindi.

Duration of the Studay
The Study was conducted from November 20, 1998 to December 21,1998.

Sampling Frame/Study Population
All newly registered pulmonary tuberculosis patients at TB Center Rawalpindi between 20 Novmber to 21 December 1998 wre included in the study.

Sample Size
At TB Center Rawalpindi, approximately 5,000 patients are registered yearly. So in a 4weeks time there are about 400 cases. Sample size caculation was determined through EPI-info version 6.04. The sampling frame was 400 patients (registered each month at TB Center Rawalpindi for treatment of tuberculosis). Expected Prevalence of prior consulting other health care providers was assumed 80%, desired precision (worst acceptable) at 5.0% condfidence level 95%, the calculated sample size was 150.

Inclusion Criteria
. Newly registered cases (less than one week) at TB Center Rawalpindi.
. Sputum smear positive and/or sputum smear negative but X-ray suggestive of pulmonary Tb.

EXclision Criteria
. Age less than 13 years.
. Relapses (recurrence after treatment).
. Re-treatment after previous default of TB Center's patients.

Procedure
The pulmonary TB pantients, who formed the basis of this study, first presented at registretion window of TB Center Rawalpindi. From there they are sent for x-ray and are advised to return after 72 hours with morning sputum specimen. At second Visit all those patients whose x-rays are suggestive of pulmonary TB are sent to the laboratory for AFB sputum examination. After investigation the Medical Officer registers them as pulmonary TB case. All those cases were included in the study who fulfilled the inclusion criteria and interviews were conducted after obtaining freely given informed consent.

Research Tools
A standardized open-ended questionnaire was perpared in order to obtain the demongraphic

information i.e. gender, age, residence, distance to TB Center, travel time etc. TO determine the patients' delay and health care provider delay, qustions were included to obtain information abut the start of initial symptoms, type of health care sought, lab investigations, diagnosis, treatment and its outline. Knowledge about the disease , its cause, tretment, curability and perception of the patients was obtained. Pretest was done and modifications were made where needed. The qustionnaire was translated into Urdu for better understanding of patient and interviewer.

Date Collection

The data was collected by an interview questionnaire. Principle investigator and three other interviews. Interviewers were trainded and a pretest was done for three days to assess the reliability of interviewers. The pretest data was not included. Further clairification was done where needed.

Entry, eleaning, verification and analysis of data

The privciple investigator entered data into computer using the softwere EPI-INFO version 6.04. Responses to open-ended qustions were coded accordingly.

Definition

TB Case: A patient who is registerd with TB Center Rawalpindi for treatment of pulmonary tuberculosis and is sputum smear positive for AFB or sputum smear negative but x-ray chest suggestive of pulmonary TB.

Patients' Delay: The delay on part of patients is defined as delay for more than three weeks in seeking health care after the start of symptoms.

Health care providers' delay: Health care providers delay is an interval between the visit to the health care provider and the start of TB tretment.

Results

The Study Population Characteristics

Table 1. Characteristics of the study population (n=160).

Variables	Statistics
Age (mean ± SD)	33±16.6
Gender	
Males (%)	53
Females (%)	47
Sputum Smear Status	
Positive (%)	41
Negative (%)	59
Residential status	
Rural (%)	60
Urban (%)	40
Years of schooling (mean ± SD)	3.6±4
Illiterate population (%)	55
Occupation	
Laborers (% of earning males)	32
House-wives (% of all females)	61
Socio-economics Status	
Patients' Income/month (mean ± SD Rs)	2,600±1,500
Family income/month (mean ± SD Rs)	3,225±2,023
Martial status	
Currently married (%)	56
Number of children (mean ± SD)	3±2
No. of dependents in the household (mean ± SD)	5±3
Head of family (%)	26
Residence distance from TB center (mean ± SD kms)	59±57

Table 1 gives the profile of study population characteristics. Among the 160 Patients included in the study, 47% were female. Bacteriological status of sputum examination for AFB was positive in 41% and negative in 59%. The rural and urban distribution was 60% and 40% respectively . Mean age of the patients was 33+16.6 years; 77.5% of the patients were below the age of 46 years. Minimum age was

13 years and maximum was 85. Mean education of the study population was 3.6±4 years of schooling, minimum education being 0 and maximum 14 years: 55% of the study population had no schooling at all. Mean education for female was 2.5±3 and for male 4.5± 4years of schooling.
Regarding the patients' occupation, 32% of all earning males were daily wage laborers, 29% of the female patients were house-wives. There were 59% (n=94) patients who had no source of income and were entirely dependent. Among the 41% who were earning the mean income was Rs.2600±l 500. There was only one earning female patient. The mean family income for female patients was Rupees 2,740±1,348 while for the family of male patients it was substantially higher, i.e., 3,661±2,406 (p=0.004).
Currently 56% of the patients were married, among the females the married proportion was 62% and among the male it was 52%. Mean number of children was 3±2 in married patients. Mean number of dependents in the households was 5±3; 26% patients were head of the family themselves, 23% were wives of head of the family and the most frequent relation (26%) was found to be the son.
Residential distance, travel cost and travel time from TB Center Rawalpindi (one-way): The mean distance between the patients' residence and the lB Center was 59 (±57) kms, while the mean travel time was 121 (±107) minutes. The mean travel cost was 3 1 (±25) rupees. There is no significant difference in male and female population for these variables.

Table 2. Mean ± SD and Median distance, travel time and costs of travel from residence to TB center Rawalpindi (one-way).

Variable	Mean		Median	
	Female (n=75)	Male (n=85)	Female (n=75)	Male (n=85)
Distance (kms)	62±59	57±56	50	40
Travel time (minutes)	128±111	115±102	90	90
Travel cost (Rs.)	32±25	29±25	25	20

Table 2 shows the distribution of the 3 variables to be squewed, as the mean is higher than the respective median.

Time between start of initial symptoms and attending TB Center Rawalpindi

The mean duration of symptoms before attending TB Center was 27 (+29) weeks. For female patients that duration was 30 (+35) weeks and in males it was 24 (±22) weeks (difference not significant).

Initial complaints

Table 3. Initial complaints of study population and at the visit to various health care providers.

Complaints*	Before consulting any HCP	At consulting first HCP	At consulting second HCP	At consulting third HCP
	n=160	n=154	n=87	n=27
	%	%	%	%
Cough	87	90	90	93
Fever	75	82	92	100
Chest pain	31	33	35	37
Weight loss	1	3	21	26
Hemoptysis	6	6	3	7
Weakness (fatigue)	6	8	16	26
Others than chest complaints	9	23	31	22

* More than one complaints were reported by most of the patients

Table 3 shows the frequency of the different individual symptoms from which the patients suffered initially (=before consulting any health care provider) and subsequently at the visits of the first, second and third health care providers.

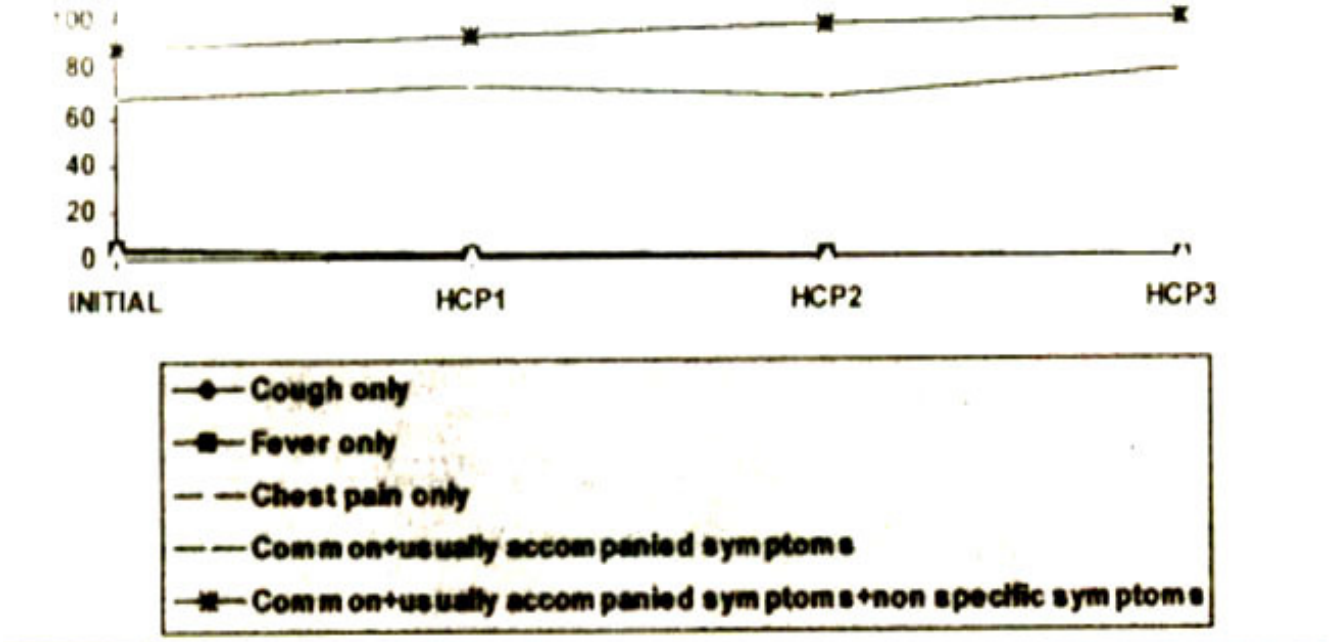

Figure Line graph of proportion of patients' symptom(s) exclusive and usually accompanied, at the start of problem and at the time of visits to various health care providers

Figure shows that common specific complaints like cough only, fever only and chest pain only, are reported in small proportion of patients. whereas combinations of these symptoms with usually accompanied symptoms of pulmonary tuberculosis like hemoptysis, weight loss, weakness, were present in large proportion and were increased with the duration of illness.

Patients behavior - delay on the part of patient

The patients' behavior was analyzed to identify delay on their part in seeking health care. The main areas that were explored included patients' health seeking through self medication and various health care providers, as well as the decision making process in selecting the type of different health care providers.

Patients health seeking through self-medication

Prior to consulting ny health care provider, out of the 160 patients 13% took self-medication only. Among them 3% took allopathic and 10% herbal self-medication. Mean duration of self-medication was 2.2 (±3 .3)weeks.

Patients health care seeking through health care providers (HCP)

Of the 160 patients. 154 (96%) went to at least one HCP, 87(54%) went also to a second HCP while 27(16.8%) went furthermore to a third HCP. Four patients went even to the fourth HCP but they were not included in the analysis. Most patients consulted very early after the start of the symptoms: 118 (77%) went within three weeks time to HCPs.

Table 4. Pattern of health care seeking through various health care provider by gender and by duration of symptoms.

Duration of Symptoms	Gender	1st HCP n=154	2nd HCP n=87	3rd HCP n=27
Within 3 weeks	Total	118 (77%)	24 (28%)	13 (48%)
	Males	53%	54%	46%
	Females	47%	46%	54%
More than 3 weeks	Total	36 (23%)	63 (72%)	14 (52%)
	Males	50%	52%	54%
	Females	50%	48%	46%

Table 4 also shows that 24 patients went even to second HCP and 13 to a third HCP in the same initial three weeks. No gender differenece was observed in the presentation to the various HCPs.

The decision making process in seeking health care through HCPs

The decision regarding going to the first, second and third health care provider was taken in 35%, 21% and 11% by the patients themselves and 65%, 79% and 89% were advised by the family members, relatives, friends, neighbors and others, respectively. The observed difference in decision making was significant among male and female patients for going to first and second HCPs (p=0.005and 0.05) respectively while no significant gender difference was observed for going to third HCP (p=O.67).

Selecting the type of health care provider

Table 5. Selection of types of HCPs by the patients by sex.

Type of HCP	1st HCP		2nd HCP		3rd HCP	
	Male n=81	Female n=73	Male n=46	Female n=41	Male n=13	Female n=14
Doctor	85	88	85	95	77	86
Dispensor	9	11	4	2	0	7
Homeopath	4	0	4	0	0	0
Hakeem	3	1	7	2	23	7

Table 5 shows the pattern of selection of different types of health care providers. Most of the patients went to a MBBS doctor. It was observed that pattern of consulting different types of health care provider remains almost the same for first and second, but for the third consultation, some patients had preferred going to the Hakeems.

Government health facilities were available in the catchment area of 62% of the patients but only 38% used the facility. Reasons for not going to the Government health facility commonly were found to be: "treatment provided was not good" in 18%, "drugs not available" in 12%, "behavior of the staff was not good" in 9%.

Health care providers' delay

The health care providers' delay was examined in all those patients who presented to them after three weeks of their start of symptoms. Main indicators selected to determine HCPs delay include advice of relevant laboratory investigations, diagnosis of the disease and initiation of the treatment.

Relevant laboratory investigations

Table 6. Comparison of lab investigation advised and/or performed in patients consulting various HCPs within 3 weeks and more than 3 weeks duration of symptoms.

	1st HCP n=154		2nd HCP n=87		3rd HCP n=27	
	≤3 weeks n=118	>3 weeks n=36	≥3 weeks n=24	>3 weeks n=63	≤3 weeks n=13	>3 weeks n=14
Tests Performed On n(%)	36 (31)	13 (36)	11 (46)	40 (64)	10 (77)	7 (50)
Tests	%	%	%	%	%	%
X-ray	81	100	82	85	80	100
Sputum	22	39	27	40	40	14
Blood	42	54	36	48	70	71
Urine	17	23	27	30	10	29
Others	8	-	27	8	-	14

Table 6 compares the number of patients going to various HCPs and investigations advised/performed by HCPs within and after 3 weeks of initiation of symptoms.

Among the patients going within three weeks to first, second and third HCPs respectively, 31, 46 and 77 percent were advised any kind of lab investigations. Among those who reported after three weeks to first, second and third HCPs respectively, 36, 64 and 50 percent HCPs, sputum tests were performed only in 38.5, 40 and 14 percent of patients respectively. It was observed that the longer the duration of symptoms the more sputum tests were requested. Thisholds for the first and second HCPs but not forthe third HCPs.

Diagnosis of tuberculosis and initiation of treatment

Table 7. Diagnosis and treatment of tuberculosis in patients who reported after three weeks of initiation of symptoms by various health care providers.

HCP's Behavior	HCP1 n=36	HCP2 n=63	HCP3 n=14
Information given about disease	45%	67%	43%
Diagnosis of tuberculosis	31%	45%	21%
Initiation of TB treatment	81%	75%	33%

(% of diagnosed as TB patients)

Table 7 shows the diagnostic strategy and treatment initiation of tuberculosis by various health care providers. It was found that among all those patients who went to first, second and third health care providers after three weeks of initiation of their symptoms repectively, 31%, 45% and 21% were diagnosed as tuberculosis by themselves. Surprisingly, all those patients who were diagnosed as having tuberculosis by first, second and third health care providers, only 82%, 75% and 33% received anti-tuberculosis treatment.

Discussion

Tuberculosis is one of the major health problem in Pakistan. It is important for the health managers to identi& and solve the issues, which are responsible for failure to control this disease. One of the most important components of tuberculosis control program is early detection. Several case-finding studies revealed that passive case finding is the appropriate method of detecting TB[1].

The study purpose was to determine the health seeking behavior of the patients and of the health care providers in diagnosis and treatment of tuberculosis. It was found that the most of the patients (7 8%) were below the age of 46 years. This finding is consistent with the earlier WHO statement that most of the TB cases are in the age group of 15 to 50 years in developing countries. No significant gender difference was found in case series. Majority of the study population belonged to low socioeconomics status, females belonged to substantially lower income families as compared to males. A bulk of patients (49%) were those who had responsibilities to look after their families i.e., 26% were head of the families while 23% were wives of the head of the households.

Most of the patients (96%) consulted atleast one health care provider prior to attending TB Center. This finding is conforming with the earlier finding of Marsh and Uplekar[8] but contrary to Krishna Swamay[9]. It was found that the most frequently consulted (86%) health care provider was the MBBS doctor, while the other health care providers that were consulted included hakeems, homoepaths and

dispensers. This is observation corroborates the findings of Liefooghe et al[10] who observed in Kenya that there was not a unique of health seeking behavior. Pattern of seeking care remains the same for first and second consultations but for third. hakims are consulted more than the homeopaths and dispensers. This finding should be seriously taken into consideration when future programs for the training of health care providers are planned. The proportion of patients that were diagnosed by third health care providers markedly declined to almost one-fifth. Similar to Marsh (1996),from all those who were diagnosed by MBBS doctors, only a third were given TB treatment. Vikram (1997) confirmed that the non-specific treatment did not cure the disease but only gave temporary relief from symptoms.

This study found that patients with only 4% had cough as an initial symptom. Most of the patients had a combination of chest related symptoms i.e., cough +fever, cough + fever+ chest pain, and cough+ fever+ non-specific complaints in 21, 15 and 10 percents respectively. As the cough was a part in all combination of symptoms among which fever and chest pain were also the main initial complaints, it was found to be in line with the WHO (1994) recommendations that all patients with persistent cough for more than three weeks must be investigated for TB.

Duration of symptoms were found to have no effect on the investigations that were advised by various health care providers. The pattern of lab investigations to diagnose TB remain almost the same but it is evident that the most reliable investigation i.e., sputum examination, is highly under utilized to diagnose TB among the symptomatic patients and x-ray is heavily relied upon. It is similar to (Uplekar et al 1996, and Qari 1996)[11,12].

In this study the patients' delay was found in about one fourth of all the study population. The health care providers' delay was found to be 70%, 56% and 79% respectively in first, second and third health care providers. According to Aoki (1995) many patients start effective treatment long after the onset of symptoms and more than 30% of existing smear positive cases are not being detected even now in numerous countries. This study also demonstrated that 42 of 154 patients were diagnosed prior to consulting TB center and only 26/42 had received TB treatment.

Our health providers' delay is contrary to Uplekar (1996). who found a relatively short delay in India. This study finds no gender differences in the patients delay attending TB Center Rawalpindi. Almost all (154/160) TB patients consulted at-least one health care provider prior to their registration with TB Center Rawalpindi. More than a half of them also consulted a second health care provider while one sixth furthermore went to a third health care provider. Two third of all patients went to a private practitioner while remaining one third consulted the government facilities. Majority of patients (86%) consulted MBBS doctors to seek health care. TB control activities should be extended to the private sector practitioners as well as the continuing medical education in the TB diagnosis and treatment.

Main reasons found for health care providers' delay were lack of relevant lab investigations leading to delay in diagnosis and initiation of TB treatment even after it was diagnosed. The most reliable lab investigation i.e., sputum examination is not being used optimally while the x-ray is over-utilized. The protocol of the national guidelines for tuberculosis control should be implemented for the diagnosis. A sputum examination should be advised by law in all patients with more than three weeks of persistent cough and adequate facilities may be provided to implement it.

As the majority of patients tend to seek early health care after the start of symptoms, their health education in identification and recognition of TB symptoms and knowledge about the source of appropriate care can reduce the delay that occurs at both the patients and the health care providers level.

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