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## **Health Care seeking Behavior of Cough Symptomatics (Pulmonary Tuberculosis Suspects) Attending Medicine Outpatient Department of a Tertiary Care Hospital of Jharkhand**

Haider Shamim<sup>1</sup>, Vidyasagar<sup>2</sup>, Sunderam Shalini<sup>3</sup>, Kumari Sneha<sup>4</sup>, Singh Shashi Bhushan<sup>5\*</sup>

<sup>1</sup>Professor and Head, <sup>2</sup>Associate Professor, <sup>3</sup>Associate Professor, <sup>4</sup>Junior Resident (3<sup>rd</sup> Year), <sup>5</sup>Lecturer cum Statistician, Dept. of Preventive and Social Medicine, Rajendra Institute of Medical Sciences (RIMS), Ranchi, Jharkhand, India

\*Corresponding Author: Singh Shashi Bhushan

### **Abstract**

Delay in diagnosis of Pulmonary tuberculosis results in increase its infectivity in the community which contributes to adverse sequelae and overall mortality. This study assessed socio demographic determinants of patient delay and main reasons behind these delays. It also attempted to find out type of first health care personnels (HCPs) and its association with socio demographic variables. It was a cross sectional, descriptive and hospital based study. Total duration of study was 15 months (March 2013-May 2014), conducted in Medicine Outpatient department (OPD) of RIMS, Ranchi. A total of 656 cough symptomatics were selected as study subjects and interviewed by using pre tested, semi structured questionnaire after getting their written consent. Significant association was established by the use of Chi square test ( $p < 0.05$ ). It was found that majority (75.61%) of the patients were having significant patient delay (>30 days). Main reasons for delay were self medication (202, 30.79%) and perception of symptom will disappear/not severe (87, 13.26%). Over half of the patients (343, 52.29%) consulted Government health care personnel (HCPs), unqualified practitioners were main care givers in (159, 24.24%) patients followed by qualified private practitioners (154, 23.47%). Demographic variables such as Poverty, illiteracy, rural background and advanced age group were strongly associated with patient delay and seeking care from unqualified practitioners. It was concluded that effective IEC services should be widely disseminated to the community so that early symptoms of tuberculosis can be recognized and treatment can be started as soon as possible.

**Keywords:** cough symptomatics, patient delay, health care personnel

### **Introduction**

Tuberculosis (TB) is one of the oldest diseases known to mankind and continues to be a major public health problem even in today's modern world. It is a preventable and curable disease, but still millions of people suffer every year and a number of them die from this disease, resulting in a heavy impact on social and economic development. <sup>(1)</sup> There were an estimated 8.6 million incident cases of TB and 1.3 million people died from this disease globally in 2012. <sup>(2)</sup> The Tuberculosis (TB) burden in India is truly staggering. About 40% of the adult population of the country is estimated to be already infected with Mycobacterium tuberculosis. Every year nearly 2.2 million new TB cases occur, of which nearly 800,000 are infectious (smear positive pulmonary) TB cases. India has more people with active TB disease than any other country in the world. <sup>(3)</sup> Early detection followed by effective therapy is extremely important in controlling TB. Delay in diagnosis results in increased infectivity in the community. <sup>(4)</sup> Smear positive cases are more likely to infect other individuals and it is estimated that an untreated smear positive patient on an average can infect about 10 contacts annually and over 20 during the natural

history of the disease until death. Delay in tuberculosis diagnosis may also lead to a more advanced disease state at presentation, which contributes to adverse sequelae and overall mortality. <sup>(5)</sup> In high TB prevalence countries, delay in diagnosis and treatment are often prolonged. <sup>(6)</sup>

Health care seeking is a central issue in all kinds of morbidity, since the duration of symptoms increases the probability of severe morbidity and harmful sequelae. The vast majority of patients spend a great deal of time and money “shopping for health” before they begin treatment, and all too often, they do not receive either accurate treatment or effective treatment, despite spending considerable resources. <sup>(7)</sup> The magnitude and risk factors for patient delays have been well documented in a number of studies <sup>(8-15)</sup>, but are little known in Indian studies <sup>(16-18)</sup> accounting for nearly 20% of the global tuberculosis burden. Thus, screening of pulmonary tuberculosis (PTB) suspects using history of cough  $\geq 2$  weeks provides a quick, cheap and convenient way to identify individual at a high risk of tuberculosis.

Jharkhand is one of the major TB burden states of India. About 13,000 people die of Tuberculosis every year in this state i.e. more than 35 people every day. <sup>(19)</sup> Therefore, it is very important to understand various reasons for patient delays and health care seeking behavior of cough symptomatics. With these facts in mind the present study was conducted with the following aim and objectives-

1. To assess socio demographic determinants of patient delay and main reasons responsible for patient delay.
2. To find out type of first health care personnels (HCPs) and its association with socio demographic variables.

## **Material and methods**

**Study design-** Cross sectional, descriptive and hospital based study.

**Study duration-**15 months (March 2013-May 2014).

**Study place-** Medicine OPD of RIMS (a tertiary level health centre which receives referrals from various private clinics, hospitals and practitioners not only from this city but also from nearby districts). Nearly 200-250 patients used to come Medicine OPD per day for seeking care. <sup>(20)</sup>

**Sample size-**656 cough symptomatics.

**Sample size determination-** Sample size was calculated by using the formula ( $N = 4Pq/d^2$ ) taking d(rate of change in suspect examined per year) as 3%. <sup>(21)</sup> Simple random sampling technique was used for selection of study population.

**Study population-** Patients (>14 yrs.) having cough of two weeks or, more with or, without other symptoms suggestive of PTB. <sup>(22)</sup>

**Exclusion criteria-**Established cases of PTB and unwilling to participate in the present study.

**Data collection tool :** A pre-tested, semi structured questionnaire which contains all necessary information regarding socio demographic profile, duration and reasons for patient delay, type of HCPs.was used for data collection after getting their written consent.

**Statistical Analysis-**Statistical analysis was done by using descriptive statistics. Data were collected in a predesigned Microsoft® Excel 2007..Significant association was established by the use of Chi square test (  $p < 0.05$ ).

**Ethical clearance-**It was taken from IEC(Institutional ethical committee) of RIMS,Ranchi.

***Some operational definitions and diagnostic criteria for the study-***

- **Patient delay**-It is defined as time interval between appearance of symptoms suggestive of pulmonary tuberculosis and their first contact with a health care professional or, facility. <sup>(9)</sup>
- **Significant patient delay**- As no scientifically agreed criteria could be found in the literature upon which to base a definition of significant patient delay, so references were taken from various other similar studies. In a study done by Goel et al<sup>(23)</sup>, Jagadish S et al<sup>(24)</sup> they defined significant patient delay of 30 days or, more.
- **Health care personnels (HCPs)-**
  1. Government health care providers-It includes all health care providers,who linked with govt. setup. It includes ASHA (Sahiyya in Jharkhand), Health workers, medical officers, specialists and AYUSH practitioners etc.
  2. Qualified Private practitioners-Persons having recognized medical degrees such as M.B.B.S, M.D, D.M, D.N.B, AYUSH doctors etc and linked with any private set up.
  3. Unqualified practitioners-It includes traditional healers, faith healers, priests, non-licensed practitioners etc.

**Results**

A total of 656 cough symptomatics were taken as study subjects after getting their consent. Among study subjects, majority (496, 75.61%) patients were having significant patient delay(table no.-1).

From the present study, it was revealed that majority of the cough symptomatics of every age group had significant patient delay. Majority of Sarna (181,82.3%) followed by Hindus(196,74.8%), Muslim(49,73.1%) and Christian(70,65.4%) respectively had patient delay of more than thirty days. On the basis of ethnicity, significant patient delay (>30 days) was seen in majority of the tribal and non-tribal patients. Significant patient delay was seen in majority (124,83.22%) of the illiterates and most (372,73.37%) of the literates. Most(381,78.40%) of the patients from lower SES had significant patient delay. Majority (88, 88.4%) of the present smokers and alcoholics(127,81.94%) had significant patient delay. Statistical significant association ( $p<0.05$ ) was seen in males, Hindu and Sarna, illiterate, lower socio-economic class, smokers and alcoholics with longer patient delay(table no.2).

It was found that out of 496 patients with significant patient delay, less than one-third (202, 30.79%) of the patients took self medication from local shops for their initial symptoms. In few (87, 13.26%) of the cases, patients thought that symptoms will disappear/not severe. Other less common causes were lack of awareness of health care facilities (76, 11.58%),poor socioeconomic status(65,9.91%) ,inaccessible health care facilities (56, 8.54%) and social stigma (10, 1.52%)

It was revealed that over half of the (343, 52.29%) patients consulted Government health facility. Qualified private practitioners were chosen as first HCPs in less than one-fourth (154, 23.47%) of cases while in nearly one-fourth (159,24.24%) of the cases, patients consulted unqualified practitioners(graph no.2). Majority of the patients from all age groups seek care from Gov. health facility. Unqualified practitioners were main care givers in nearly one-fourth (159, 24.2%) of the patients of age group more than 65 yrs. On the basis of gender, over half (265, 53.97%) of the males consulted Govt. health facility. Unqualified practitioners were approached by nearly one-fourth (72,27.5%) Hindu followed by Sarna(60,27.3%),Christian(17,15.9%) and Muslim(10,14.9%) respectively. Less than half (70, 46.98%) of the illiterates seek care from the govt. health facility and nearly one-third (53, 35.57%) of the illiterates chosen unqualified practitioners

as their first HCPs. Nearly half of the both groups-married (276, 53.08%) and unmarried (67, 49.26%) chosen govt. health facility. Among patients from lower SES, less than half (240, 49.38%) of the patients chosen Govt. health facility and more than one-fourth (140, 28.81%) of the patients consulted unqualified practitioners (table no.3). Statistical significant association ( $p < 0.05$ ) was seen among males, Hindu and Sarna, rural area, illiterates and lower socioeconomic class.

## Discussion

In the present study, patient delay of more than 30 days was considered as significant patient delay. Other studies<sup>(25-30)</sup> also reported patient delay ranging from 20-81% based on a 4 week/1 month cut off period for patient interval. Among reasons for significant patient delay, major reasons were self medication and symptoms will disappear/not severe. Our findings were in consistent to the findings of a study conducted by Wondimu et al<sup>(31)</sup> who observed that 33% of patients assumed that symptoms will disappear itself, 32% had financial constraints and 7% had absence of transportation. Another study conducted by Auer et al<sup>(32)</sup> observed that illness considered harmless(59%) and lack of money (22%) were the most frequent responses for the patient delays. In a study by Asch et al<sup>(33)</sup>, 33% of the patients who had delay were unsure where to go for cure, 23% lacked the regular doctor, 23% felt that symptoms were not serious.

As far as socio demographic variables were concerned, patients of every age groups, females, illiterates, lower socioeconomic status, rural area, smokers and alcoholics had longer patient delay of 30 days or, more. These variables were found to be statistically significant ( $p < 0.05$ ). Lack of knowledge, inaccessible health care services, substance abuse makes the patients vulnerable for longer patient delay. Various other studies( Jagadish et al<sup>(24)</sup>, Thakur et al<sup>(34)</sup>, Haider S et al<sup>(35)</sup>, Selvaen et al<sup>(36)</sup> and Van der Werf M J et al<sup>(37)</sup>) on patient delay revealed the similar finding.

Government health facility as first HCPs were chosen by 52.29% cases. In 24.24% of the cases, patients consulted unqualified practitioners as first HCPs and rest consulted private practitioners. These finding revealed that till now, most of the persons had faith in Govt. health setup. At the same time, it is very distressing that some people also used to seek care from unqualified practitioners. Since Jharkhand is a Tribal predominant district so, majority of the patients came from rural background and are illiterate. Jagdish S et al<sup>(24)</sup> and Thakur et al<sup>(34)</sup> in their study found that most of the patients seek care from Govt. health facility.

On the basis of HCPs concerned, Govt. health care services and unqualified practitioners were main care givers in patients of age group more than 65 yrs, females, patients from rural background, illiterate and lower socio economic status. This was due to ignorance, poverty and inaccessible health care facilities in their vicinity. These associations were found to be statistical significant ( $p < 0.05$ ). Similar study done by Long N H et al<sup>(11)</sup>, Solomon Y et al<sup>(38)</sup>, Thakur et al<sup>(34)</sup> and Haider S et al<sup>(35)</sup> found that majority of study subjects consulted Govt. Health agency and they belonged to rural area, lower socioeconomic status and illiterate.

## Conclusion

Majority of the cough symptomatics were having significant patient delay and the main reasons behind that were self medication and having perception that symptoms are not severe and will disappear gradually. Government HCPs were the main care givers in all groups of patients. But a substantial number of patients also seek care from unqualified personnel.

So, there is high need of wider dissemination of Information, Education and Communication (IEC) material to illiterates, poor, females and advanced age group patients regarding early diagnosis and correct treatment of tuberculosis.

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## Tables and Graphs

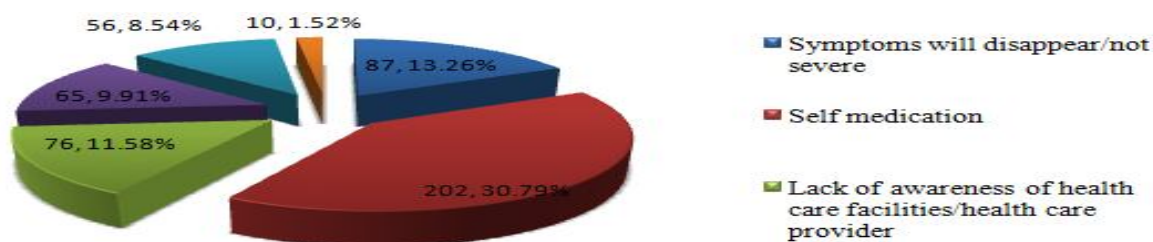
**Table no.1- Duration of Patient delay among cough symptomatics (n=656)**

Duration(in days) of Patient delay	Number	Percentage (%)
≤30(acceptable patient delay)	160	24.39
>30(Significant patient delay)	496	75.61
Total	656	100.00

**Table no.2-Association between patient delay and socio demographic variables**

Variables	Patient Delay		Total No (%)	P value, $\chi^2$ ,df
	≤30 days No. (%)	>30 days No. (%)		
<b>Age(in years)</b>				
15-25 yrs	47(26.26%)	132(73.74%)	179(100.00%)	$\chi^2=0.465$ df=2 p=0.792
26-65 yrs.	108(23.68%)	348(76.32%)	456(100.00%)	
>65 yrs.	5(23.81%)	16(76.19%)	21(100.00%)	
<b>Gender</b>				
Male	130(26.48%)	361(73.52%)	491(100.00%)	$\chi^2=4.608$ df=1; P=0.0318*
Female	30(18.18%)	135(81.82%)	165(100.00%)	
<b>Religion</b>				
Hindu	66(25.2%)	196(74.8%)	262(100.00%)	$\chi^2=11.634$ df=3 P=0.009*
Muslim	18(26.9%)	49(73.1%)	67(100.00%)	
Christian	37(34.6%)	70(65.4%)	107(100.00%)	
Sarna(local religion of Jharkhand)	39(17.7%)	181(82.3%)	220(100.00%)	
<b>Ethnicity</b>				
Tribal	68(22.08%)	240(77.92%)	308(100.00%)	$\chi^2=1.683$ Df=1 P=0.194
Non-tribal	92(26.44%)	256(73.56%)	348(100.00%)	
<b>Education</b>				
Illiterate	25(16.78%)	124(83.22%)	149(100.00%)	$\chi^2=6.057$ df=1; P=0.0138*
Literate	135(26.62%)	372(73.37%)	507(100.00%)	
<b>Socioeconomic status(modified Prasad classification,2013)</b>				
I&II	25(40.98%)	36(59.02%)	61(100.00%)	$\chi^2=11.732$ df=2 P=0.0028*
III	30(27.52%)	79(72.48%)	109(100.00%)	
IV&V	105(21.60%)	381(78.40%)	486(100.00%)	
<b>Smoking habit</b>				
Present smoker	15(14.56%)	88(85.44%)	103(100.00%)	$\chi^2=8.654$ df=2 P=0.0132*
Past smoker	18(20.00%)	72(80.00%)	90(100.00%)	
Non-smoker	127(27.43%)	336(72.57%)	463(100.00%)	
<b>Alcohol consumption</b>				
Yes	28(18.06%)	127(81.94%)	155(100.00%)	$\chi^2=4.404$ df=1; P=0.0358*
No	132(26.35%)	369(73.65%)	501(100.00%)	
<b>Total</b>	<b>160(24.40%)</b>	<b>496(75.60%)</b>	<b>656(100.00%)</b>	

\*Statistical significant result(p&lt;0.05)



Graph no.1-Reasons for significant patient delay (n=496)



Graph no.2-Type of first health care personnel (HCP)(n=496)

Table no.3-Association of first HCPs with various socio demographic variables (n=656)

Variables	Govt. health facility (n=343)	Qualified Private practitioner (n=154)	Unqualified practitioner (n=159)	Total (n=656)	P value, $\chi^2$ , df
<b>Age(in completed yrs.)</b>					
15-25	96(53.6%)	42(23.5%)	41(22.9%)	179(100.00%)	$\chi^2=2.664$ df=10 P=0.988
26-65	236(51.75%)	108(23.68%)	112(24.56%)	456(100.00%)	
>65	11(52.4%)	4(19.0%)	6(28.6%)	21(100.00%)	
<b>Gender</b>					
Male	265(53.97%)	122(24.85%)	104(21.18%)	491(100.00%)	$\chi^2=10.149$ df=2 P=0.0062*
Female	78(47.27%)	32(19.39%)	55(33.33%)	165(100.00%)	
<b>Religion</b>					
Hindu	130(49.6%)	60(22.9%)	72(27.5%)	262(100%)	$\chi^2=16.683$ df=6 P=0.01052*
Muslim	45(67.2%)	12(17.9%)	10(14.9%)	67(100%)	
Christian	67(62.6%)	23(21.5%)	17(15.9%)	107(100%)	
Sarna	101(45.9%)	59(26.8%)	60(27.3%)	220(100%)	
<b>Area</b>					
Rural	250(50.30%)	112(22.54%)	135(27.16%)	497(100.00%)	$\chi^2=9.556$ df=2 P=0.0084*
Urban	93(58.49%)	42(26.42%)	24(15.09%)	159(100.00%)	
<b>Education</b>					
Illiterate	70(46.98%)	26(17.45%)	53(35.57%)	149(100.00%)	$\chi^2=14.236$ df=2 P=0.0008103*
Literate	273(53.85%)	128(25.25%)	106(20.91%)	507(100.00%)	
<b>Marital status</b>					
Married	276(53.08%)	116(22.31%)	128(24.62%)	520(100.00%)	$\chi^2=1.905$ df=2 P=0.3857
Unmarried	67(49.26%)	38(27.94%)	31(22.79%)	136 (100.00%)	
<b>Socioeconomic status(Modified Prasad classification)</b>					
I&II(Upper)	35(57.38%)	21(34.43%)	5(8.20%)	61(100.00%)	$\chi^2=23.47$ df=4 P=0.000101*
III(Middle)	68(62.39%)	27(24.77%)	14(12.84%)	109(100.00%)	
IV & V(Lower)	240(49.38%)	106(21.81%)	140(28.81%)	486(100.00%)	
<b>Total</b>	<b>343(52.3%)</b>	<b>154(23.5%)</b>	<b>159(24.2%)</b>	<b>656(100.00%)</b>	

\*Statistical significant result(p<0.05)