RESEARCH ARTICLE

HEALTH SEEKING BEHAVIOUR AND REASONS FOR DELAY IN DIAGNOSIS AND CARE OF TUBERCULOSIS PATIENTS IN A TERTIARY CARE HOSPITAL, BERHAMPUR

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ARTICLE INFO	ABSTRACT
	Introduction: Tuberculosis kills more youth and adults than any other infectious disease and so strikes the most productive age group. When left untreated a smear positive case can infect between 10-15 persons per year. Therefore early detection followed by effective treatment is imperative for the successful control of tuberculosis. **Objective:** 1.To explores the different patterns of health seeking behaviour of patients from first presentations till diagnosis. (2) To find out the relationships between sociodemographic & life style factors with the time of presentations & diagnosis. (3) To reveal the factors associated with patient delay, health system delay and irregularities after initiation of treatment. **Materials and Methods:** The study was conducted at Pulmonary medicine OPD of MKCG Medical College, Berhampur and Chest OPD of District Headquarter Hospital, Berhampur for a period of one year between Ist June 2013 – 31 may 2014. **Results:** Majority of the patients (43.9%) were service holders followed by other occupations. 42% of the patients belonged to class V followed by 23% who belonged to class IV socio-economic status. The most common symptom with which the patients presented with were cough (94%) and fever (87.5%). It was observed that most common reasons for patient delay was the belief of not so serious cough (88.5%), dependency followed by financial constraints in 72.9% subjects. **Conclusion:** Considering the high magnitude of pre-treatment delay it is imperative to access a simple and rapid diagnostic test for TB that can be used at the lower healthcare facility level.

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INTRODUCTION

Tuberculosis (TB) remains a significant global public health issue. Significantly, the TB disease burden is unequally distributed among men and women. Of the estimated 8.7 million incident TB cases and 1.4 million deaths caused by TB globally in 2011, roughly one-third occurred among women (2.9 million incident TB cases and 0.5 million deaths) (WHO 2012). Among communicable diseases, tuberculosis is the second leading cause of death worldwide, killing nearly 2 million people each year (Frieden *et al*., 2003). 98% occurs in low-income countries. (Raviglione *et al*., 1995) India is the highest TB burden country accounting for one fifth (21%) of the global incidence and 17th among 22 High Burden Countries in terms of TB incidence Rate (Central Tb Division, 2011). TB kills more women than all causes of maternal mortality put together. Various reasons including poverty, population growth, migration and HIV/AIDS play role in continuous threat of TB, but significant problem lies with the fact that many cases remained undiagnosed. (WHO, 2002) This could be due to patients delay in seeking health care or failure of health care systems to

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diagnose patients in a timely manner. Because of importance of delay in diagnosis this study was conducted to evaluate patient and health system delay.

MATERIALS AND METHODS

The study was conducted at Pulmonary medicine OPD of MKCG Medical College, Berhampur and Chest and TB OPD of District Headquarter Hospital, Berhampur for a period of one year between Ist June 2013 – 31 may 2014. For estimation of sample size, a pilot study was conducted at Pulmonary Medicine OPD. To find out the proportion of TB patients with delayed presentation for diagnosis Thirty newly sputum smear positive patients were taken. The delay in diagnosis was found to be 62%. With sampling error of 10% and 95% confidence limit Sample size was calculated as 245 using the formula $4pq/E^2$, where p = Prevalence of delay, q= 1-p and E = Sampling error. To satisfy the precision, 273 patients were included in the study. The investigator attended the patients at respective OPDs of MKCG medical college and city hospital and Berhampur. Name and address of the patients were taken from RNTCP register maintained at OPDs. The investigator visited the patients" residence within 7 days of diagnosis. Subsequent visits were done after completion

of intensive and continuation phases. Relevant data were collected using a pre-designed and pre-tested questionnaire and cross-checked by interviewing the senior lab technicians, DOT providers and doctors of respective hospitals.

RESULTS

Table No. I shows that out of 264 patients, 57% were males and 43% were females. Majority belonged to 35-44 years age-group (31.8%) followed by > 45 years (31.1%).

Table I. Age and Sex Distribution of study population

Age Group	Male		Female		Total	
	No.	%	No.	%	No.	%
15-24	18	12	23	20.8	41	15.5
25-34	25	16.7	32	28.1	57	21.6
35-44	50	33.4	34	29.9	84	31.8
>45	57	38	25	21.8	82	31.1
Total	150	100	114	100	264	100

Table II. Socio-demographic characteristics of study population

Religion	No.	%
Hindu	237	89.7
Muslim	9	3.4
Christian	18	6.8
Marital status		
Married	185	70
Unmarried	79	29.9
Literacy status		
Illiterate	22	8.3
Primary	104	39.4
secondary	109	41.9
Higher	29	10.9
Type of Occupation		
Farmer	41	15.5
House-wife	42	15.9
Student	23	8.7
Service-Holder	116	43.9
Business	27	10.2
Others	15	5.6
Socio-economic status		
Class I	12	4.5
Class II	36	13.6
Class III	44	16.7
Class IV	61	23.1
ClassV	111	42

As shown by Table No. II, majority i.e 87.9% of patients were Hindu. About 49%of patients had secondary or primary education (39.1%). Majority of the patients (43.9%) were service holders followed by other occupations. 42% of the patients belonged to class V followed by 23% who belonged to class IV socio-economic status.

Table III. Family and housing conditions of study population

Type of Family	No.	%
Nuclear	77	29
Joint	139	52.6
Three generation	48	18
Housing Conditions		
Type of House		
Kutcha	110	41.7
Thatched	61	23
Pucca	93	35.2
Ventilation		
Adequate	98	37
Inadequate	166	62.9
Overcrowding		
Present	224	84.8
Absent	40	15.1

Table No. III shows that majority, 139 (52.6%) patients belonged to joint family followed by 77 (29%) belonged to nuclear families. 41.7% patients lived in kutcha house followed by 35% who lived in pucca house. 62.9% of patients lived in houses with inadequate ventilation. Adequate lighting was present in only 37% of households. 84.8% of patients lived in overcrowded houses.

Table IV. Presenting symptoms at the time of diagnosis

Symptoms	No.	%
Cough	249	94.3
Fever	231	87.5
Chest Pain	50	18.9
Hemoptysis	42	15.9
Breathlessness	68	25.7
Weightloss	115	43.5
others	9	3.4

The most common symptom (Table No. IV) with which the patients presented with were cough (94%) and fever (87.5%).

Table V. Type of self medication by study population

Type of self medication	No.	%
Cough Syrup	93	51.3
Home remedies	78	42.8
Antibiotics	11	6
No medications	82	31

Table No. V shows that 68.9% of the patients had history of self medications. Majority of them had cough syrup (51.3%) followed by 42.8% who took home remedial measures. Only 6% took antibiotics for their symptoms.
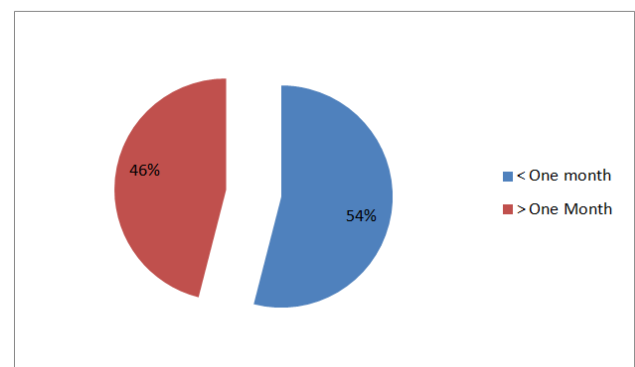

Fig. I. Time lag between symptoms and consultation at hospital

Overall (Fig.No.I) 46% of the patients came to hospital after one month from the onset of signs and symptoms including cough. Median patient delay in this study was 37 days.

Table VI : Duration of health system delay

Duration	Number	Percentage
< 1 week	176	66.7
>1 week	88	33.3
Total	264	100

Fig. No. II shows that first point of contact for 59.4% of subjects was private doctors while 21.9 % consulted government doctors. 11.3% of subjects visited paramedical workers for treatment
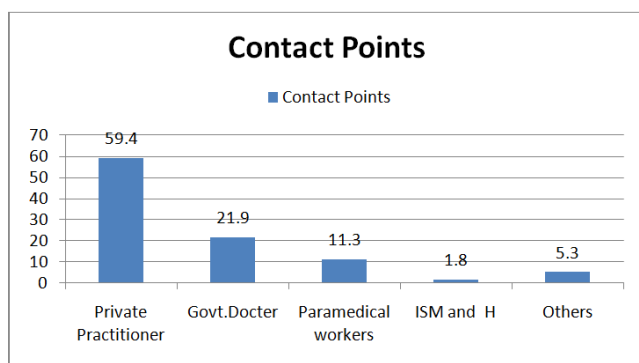
Fig. II. First formal contact point in the health system

In 33% of the patients (Table VI), more than seven days had lapsed from their first reporting at OPD till diagnosis. The causes of such system delay were holiday, delay in second visit by patients and shortage of staff strength.

Table VII. Socio-economic status in relation to patient delay

Socio-economic status	No Delay (%)	Patient delay	Total
Class I	9 (75%)	3(25%)	12(4.5%)
Class II	25 (69.4%)	11(30.5%)	36 (13.6%)
Class III	28 (63.6%)	16(36.3%)	44(16.7%)
Class IV	36(59%)	25 (40.9%)	61(23%)
Class V	44(39.6%)	67(60.3%)	111(42.%)
Class VI	142(53.7%)	122(46.2%)	264 (100%)

As per Table No. VII, longer patient delay was in 60.3% of patients of lower socio-economic status whereas it was 25% in patients belonging to upper socio-economic status. This difference was found to be statistically significant (X^2 = 52.9, df=4, p<0.001). Delay among lower socio-economic people were mostly due to lack of awareness, neglect towards health, distance from hospital and shortage of money .

Table VIII. Literacy status and Patient delay

Literacy status	No Delay	Patient Delay	Total
Illiterate	9(40.9%)	13(59%)	22(8.3%)
Primary	47(45%)	57(54.8%)	104(39.4%)
Secondary	64(58.7%)	45(41.2%)	109(41.2%)
Higher	22(75.8%)	7(24.1%)	29(10.9%)
Total	142(53.7%)	122(46.2%)	264(100%)

As shown by Table VIII, 59% of illiterate patients had delay in seeking health care compared to 24.1% in higher educated group. This difference was statistically significant (X^2= 9.67,df =3, p=0.02). Delay in seeking care among illiterate were mostly due to their lack of awareness and poverty.

Table IX. Reasons for patient delay

Reasons for delay	Male(%)	Female(%)	Total
Cough not serious	59(85.5%)	49(92.4%)	108(88.5%)
TU/MC far away from residence	29(42.1%)	26(49.1%)	55(45.1%)
Dependant	41(59.4%)	37(47.4%)	78(63%)
Busy/lack of time	17(24.6%)	9(16.9%)	26(21.3%)
Scarcity of money	47(68.1%)	42(79.2%)	89(72.9%)
TU/MC closed	3(4.3%)	1(1.4%)	4(3.3%)
Lack of knowledge	27(39.1%)	22(41.5%)	49(40.1%)
Social stigma	12(17.3%)	33(62.2%)	45(36.8%)

It was observed (Table IX) that most common reasons for patient delay was the belief of not so serious cough (88.5%), dependency (too old /serious illness) in 63.9%, followed by financial constraints in 72.9% subjects. In total 264 newly sputum smear positive patients (Fig. No.III) were followed up during and completion of full course of anti-tubercular treatment. 199(75.3%) patients were cured, 59 (22.3%) patients completed their treatment and 6(2.2%) patients died.

DISCUSSION

The current study was conducted to assess the health seeking behaviour and reasons for delay in diagnosis and care of TB patients. The study included 264 patients, out of which 57% were males and 43% were females. Majority belonged to 35-44 years age-group (31.8%) followed by > 45 years (31.1%). Rajeshwari *et al* also observed in their study that TB was a major public health problem in patients above 45 years. The male to female ratio was 1.3:1. (Rajeswari *et al*., 2002) Majority of patients were Hindu. About 49% of patients had secondary followed by primary education (39.1%). Majority of the patients (43.9%) were service holders followed by other occupations. 42% of the patients belonged to class V followed by 23% who belonged to class IV socio-economic status Majority of patients belonged to joint family followed by nuclear families. 41.7% patients lived in kutcha house followed by 35% who lived in pucca house. More than half of patients lived in houses with inadequate ventilation. 84.8% of patients lived in overcrowded houses. All these sociodemographic factors are more conducive for spread of pulmonary TB. The most common symptom with which the patients presented with were cough (94%) and fever (87.5%). Similar findings were observed by Solomon Yimer *et al*. (2005) More than half of the patients had history of self medications. Tobgay *et al*. (2006) had found 70.5% of men and 65.4% of women had taken self-medication. The first point of contact for 59.4% of subjects was private doctors while 21.9 % consulted government doctors. 11.3% of subjects visited paramedical workers for treatment. Similar findings were shown by Mpungu S Kiwuwa *et al*. (2005) and Valeza *et al*. (1991) Rajeswari *et al*. (2002) had shown in her study 69% of patients experienced a health system delay of more than one week. In this study 33% of the patients suffered health system delay due to holiday, delay in second visit by patients and shortage of staff strength. Longer patient delay was in 60.3% of patients of lower socio-economic status whereas it was 25% in patients belonging to upper socio-economic status. 59% of illiterate patients had delay in seeking health care compared to 24.1% in higher educated group. Delay among lower socio-economic people were mostly due to lack of awareness, neglect towards health, distance from hospital and shortage of money . Delay in seeking care among illiterate were mostly due to their lack of awareness and poverty. Rajeswari *et al*. (2002) had similar findings.

Tobgay *et al*. (2005) and Nguyen Phuong Hoa *et al*. (2007) had reported in their study that the most common reason behind delay was cough as not a serious condition. In this study it was observed that most common reasons for patient delay was the belief of not so serious cough(88.5%), dependency (too old /serious

illness) in 63.9%, followed by financial constraints in 72.9% subjects. 75.3% of patients were cured where as 22.3% patients completed their treatment and only 2.2% patients died.

Conclusion

The present scenario reflects Considerable delay exists between symptom onset and treatment initiation among tuberculosis patients. While a substantial delay was attributed to health system in diagnosing the tuberculosis disease. Cough not severe & financial constraints were the main reasons for the patient delay and first contact with a private provider was the main reasons for health system delays.

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