Original Research Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20200419

Health care seeking behaviour of pulmonary tuberculosis patients in Jabalpur district, Madhya Pradesh

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Received: 04 January 2020 Accepted: 20 January 2020

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ABSTRACT

Background: Successful tuberculosis control requires specific behaviors from patients and health providers. Therefore, understanding behaviors is fundamental to design interventions to strengthen tuberculosis control programs, including communication interventions. The aim of this study was to assess the healthcare-seeking behavior of pulmonary tuberculosis (PTB) patients in Jabalpur district.

Methods: Cross-sectional study was conducted among category I new sputum positive PTB patients identified from nine designated microscopy centres from November 2013 to October 2014. Calculated sample size of 135 with a multistage random sampling method was used. Student's t-test and Chi-square test were used along with descriptive statistics.

Results: Mean age of patients was 33.87 (14.3) years, males constituted 66.7%, 72.5% patients belonged to below class IV socioeconomic status. Cough was experienced by 91.1% subjects, followed by fever (69.6%). First action was consulting a health care provider (HCP) in 41.5% followed by self-medication (21.5%). It took two attempts for 76% of patients to reach a formal health care provider. Private health care providers were consulted as first choice among HCPs by 86.7% patients, initial diagnosis was made by them in 25.9% cases. Sixty-three percent of patients were not satisfied with care at government hospitals, 41.5% had not heard of tuberculosis before their diagnosis, 59.5% of patients got information about tuberculosis from their relatives suffering from it.

Conclusions: Cough is the most common and earliest symptom responsible for seeking care in pulmonary tuberculosis. Government health facilities contribute maximum to diagnosis but private health facility is the first choice for initial consultation. Patients' perception of suggestive symptoms needs to be changed.

Keywords: Healthcare-seeking behavior, Pulmonary tuberculosis, Health care provider

INTRODUCTION

The estimated annual incidence of tuberculosis in India is 27 lakhs. Successful tuberculosis control requires specific behaviors from patients and health providers as well as a conducive environment that facilitates those behaviors. Health care-seeking behavior among pulmonary tuberculosis (PTB) patients covers the whole range of behavior of a chest symptomatic like the pre-

disease knowledge of the patients about the disease, initial action they took on having symptoms, their attitude towards private or the public health care sectors.² Understanding patients' behaviors is fundamental to design interventions to strengthen tuberculosis control programs, including communication interventions. For identifying the barriers it is useful to figure out preferred behavior from the first symptom suggestive of PTB to diagnosis and treatment (cure).³ Thus, this study was

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conducted to assess the healthcare-seeking behavior of pulmonary tuberculosis patients in Jabalpur district.

METHODS

The observational cross-sectional study was approved by Institutional ethics committee N.S.C.B. Government Medical College, Jabalpur, M.P. Informed consent from each participant was taken before the interview. Confidentiality was maintained throughout.

Study area

The observational cross-sectional study was at Jabalpur district of Madhya Pradesh, which has a total population of 24, 60,714 according to census 2011.⁴ As per the administrative setup of the Revised National Tuberculosis Control Program (RNTCP) 2014, Jabalpur district has been divided into five Tuberculosis Units (TU) and 28 Designated Microscopy Centers (DMC's). All persons suspected of having pulmonary TB are referred to DMCs for sputum smear examination. The study has been carried out in nine DMC's; five urban and four rural, (Urban- Kotwali, Ranjhi, Ghamapur, Motinala, Medical college Jabalpur, Rural- Sihora, Patan, Panagar, Bargi)

The study period was during 1 November 2013 to 31 October 2014.

The population of the study was new sputum positive (NSP) PTB cases identified from RNTCP setup.

Inclusion criteria

Category I-NSP PTB cases, ≥15 years of age, registered in RNTCP between January 2014 to June 2014 i.e. two quarters were included.

Exclusion criteria

Those who cannot be contacted at the recorded residential address even after two visits, not consenting to participate and terminally ill patients were excluded.

Sample size

This study was part of a broader study having the objective to estimate the prevalence of diagnostic delay of PTB, hence the sample size was calculated by using the formula for estimating proportions.⁵ Sample size (N)=Z²PQ/d². We conducted a pilot study (30 cases), in which the proportion of diagnostic delay was calculated to be 83% (P). Taking 95% confidence level (Z for two sided test) and 8% relative precision, and adding 10% for non-responders, a sample size of 135 was finalized.

Sampling

Multistage random sampling technique was used. In the first stage, we selected DMC's and in the second stage,

we selected NSP cases from each DMC. We listed out 28 DMC's of the area as rural and urban and chose five DMCs from urban and four DMCs from rural area as per population proportional to size. Fifteen patients from each DMC were randomly selected.

Operational definitions

Symptoms suggestive of TB: Only cardinal symptoms described for TB were considered; cough, fever (including evening rise in temperature), loss of weight, chest pain, hemoptysis.

Health care provider (HCP): Any person practicing as a doctor, consulted by the patient about his/her sickness that gave or prescribed something (whatever the form) for treatment. It includes formal and non-formal HCP (quacks).

Formal HCP: A qualified allopathic or Ayush Medical practitioner.

Non-formal HCP: A non-qualified person practicing medicine

TB stigma: Feeling of disapproval that TB patients experience due to their illness in their day-to-day life within the community.

Data collection tools and techniques

Data were collected on a standardized pre-designed and pre-tested study tool having questions pertaining to PTB symptoms experienced, earliest symptom experienced, symptom which made them seek health care, actions they took on having symptoms, type of health care facility approached initially, health facility in which diagnosis was made (government/private), expenses incurred, reasons for consultation with a particular health facility, satisfaction with the health care facility, pre-disease knowledge about TB. The data was collected by face to face interviews. Satisfaction with care score for health facility was calculated based on questions like presence/absence of proper signage and proper sitting place, waiting time for consultation, availability of doctor for 24 hours, going far for investigations or not, irregularities in getting drugs, behavior of hospital staff. Stigma was measured using questions like feeling ashamed of having tuberculosis; having to hide tuberculosis diagnosis from others; cost incurred by the long disease duration; isolation due to tuberculosis; whether a girl is able to decide about getting tuberculosis treatment, and the extent to which tuberculosis affects the following: relation with others; work performance; marital relations; family responsibilities; chances of marriage: family relations; female infertility; complications during pregnancy; breastfeeding; and pregnancy outcome.

Statistical analysis

Data was entered and analyzed using MS Excel 2007 and SPSS 20.0. Mean (SD) and percentages were calculated for quantitative and qualitative data respectively. Responses to questions measuring knowledge were recorded on a three-point Likert scale (three best and one worst) which included: knowledge about the mode of spread of disease, its causes, curability, existence of a vaccine, and duration of treatment. For Satisfaction with health care facility, the median percentage score was used as the cutoff for classifying into Satisfied/Unsatisfied. Stigma was measured using questions, responses to which were recorded on a five-point Likert scale (five the highest and one the lowest degree of stigma). Means were compared with t-test, Chi-square test was used to

compare proportions. P<0.05 was considered significant. All tests were considered two sided.

RESULTS

A total of 143 patients were approached, of which eight were excluded due to insufficient information leading to a total of 135 important cases. Response rate was 94.4%. Data of 135 individuals was included in the final analysis. Males constituted 66.7% (90 of 135), Hindus were 80% (108 of 135), Muslims were 18.5% (25 of 135) and Christians were 1.5% (2 of 135). Mean age of study population was 33.87 (14.3) years. More sociodemographic characteristics of the study population are shown in Table 1.

Table 1: Socio-demographic characteristics of the study population (n=135).

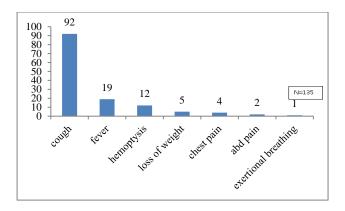
Characteristics	Number	Percentage (%)	
Age (years)			
15-24	45	33.3	
25-34	33	24.4	
35-44	23	17.0	
45-54	17	12.6	
55-64	12	8.9	
>65	5	3.7	
Education (completed)			
Graduate and higher	8	5.9	
Higher secondary (11 th or 12 th)	13	9.6	
High school (9 th or 10 th)	20	14.8	
Middle school (6 th to 8 th)	19	14.1	
Primary (1st to 5th)	37	27.4	
Illiterate	38	28.2	
Marital status			
Married	86	63.7	
Single	42	31.1	
Divorced or separated	4	3.0	
Widowed	3	2.2	
Occupation			
Technical or professional	2	1.5	
Clerical or worker	95	70.4	
Student	18	13.3	
Unemployed or HW	20	20 14.8	
Residence			
Rural	60	44.4	
Urban	75	55.6	

Cough was the commonest symptom experienced (91.1%), followed by fever (69.6%), weight loss (29.6%), chest pain (13.3%) and haemoptysis (11.1%). Figure 1 shows the symptoms which made the patients seek health care.

On having the symptoms suggestive of PTB the first action by the patients was analysed and presented in Figure 2.

Fifty six out of 135 (41.48%) went to HCPs including non-formal HCP (quacks) as first action. More people in urban area went to a drug store than rural (p=0.004), whereas faith healer (guniya) was approached more in rural areas initially (p=0.000) (Table 2).

Majority (76.3%) of patients reached a formal HCP in 2nd attempt (Figure 3). Whereas 86.7% patients first went to private health facility, only 25.9% got initially diagnosed there, which is a sharp contrast with government facility (Figure 4).



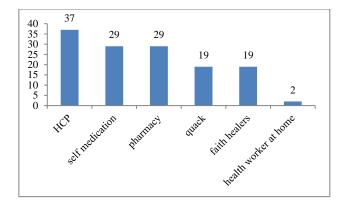


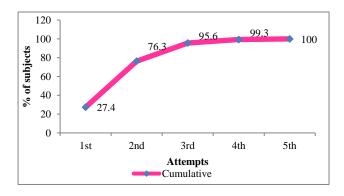
Figure 1: Symptoms which made the study population seek health care.

Figure 2: First action with the onset of symptoms (n=135).

Table 2: First action with the onset of symptoms.

Health seeking behavior (first action)	Rural n=60 N (%)	Urban n=75 N (%)	Total n=135 N (%)	χ²	P value
НСР					
Formal	11 (47.8)	26 (78.8)	56 (41.5%)	5.796	0.016
Non-formal	12 (52.2)	7 (21.2)			
Self medication	13 (21.7)	16 (21.3)	29 (21.5)	0.002	0.96
Drug stores (pharmacy shops)	6 (10)	23 (30.7)	29 (21.5)	8.441	0.004
Faith healer	16 (26.7)	3 (4.0)	19 (14.1)	14.161	0.000
Health worker at home like ASHA, AWW	2(3.3)	0(0)	2 (1.48)	2.53	0.11

Drug Stores vs rest, faith healers vs rest; ASHA: accredited social health activist; AWW: anganwadi worker.



40.00 35.00 25.00 20.00 10.00 5.00 0.00 1 2 3 4 5 6 7 8 10 Number of HCP consulted

Figure 3: Number of attempts took by subjects to reach a formal health care provider.

100.00 86.7 Government 74.07 80.00 Private eutage 60.00 40.00 Linear (Private) 25.92 13.3 20.00 0.00 Health facility first Health facility which consulted made initial diagnosis

Figure 4: Contrast between initial consultation and initial diagnoses.

Figure 5: Number of HCP's consulted before the initial diagnosis of TB.

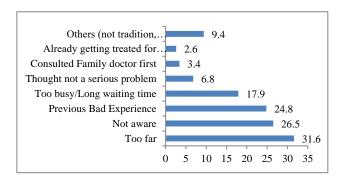


Figure 6: Reasons for not consulting government or TB clinic as first choice (multiple responses).

After experiencing suggestive symptoms if patient initially consulted government facility then the mean number of HCP's needed to be consulted before initial diagnosis was 1.5 as compared to 2.92 when a private health care facility was initially consulted (p<0.001). Number of HCP's consulted before reaching the initial diagnosis varied (Figure 5). Reasons for not consulting government health facilities as first choice are shown in Figure 6.

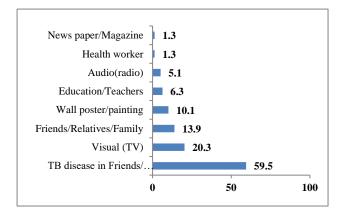


Figure 7: Source of information about TB (multiple responses).

Sixty-three percent participants were not satisfied with the care at government hospitals. Forty-one percent of patients had never heard about TB before diagnosis. Maximum (59.5%) patients know about TB from their relatives suffering from the disease. The source of information on TB as told by patients is shown in Figure 7.

Twenty-two percent patients correctly knew how TB spreads (Figure 8). Forty-seven percent study population lived within half an hour away from the nearest public health facility. The rural part of the sample lived at a farther distance from public health facility than urban part (p<0.001). Fifty one percent felt ashamed of having PTB, stigma related to TB is shown in Figure 9.

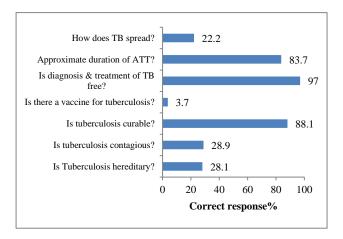


Figure 8: Knowledge of respondents about TB (multiple responses).

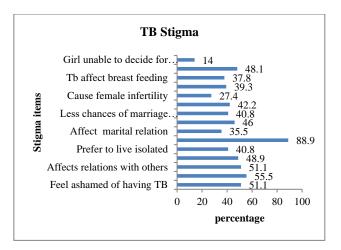


Figure 9: TB stigma.

DISCUSSION

Symptoms and initial actions

Cough followed by fever was the main symptom experienced by tuberculosis patients, which prompted them to seek health care. Also 'cough only' was the earliest symptom at the onset of illness in the majority of cases followed by 'cough and fever simultaneously'. Other symptoms were reported less frequently. These findings are consistent with the study by Rajeswari et al from southern India where 98% of tuberculosis patients presented with cough and Salaniponi et al from Malawi where 61% of patients presented with cough and 16% with fever.^{6,7} The results are also similar to various studies around the world, as published in a systematic review.8 However, Tamhane et al reported fever to be the most common presenting symptom although they considered cough >20 days as suggestive symptom.⁹ It is well known that tuberculosis is initially suspected by the cough. It might be that more 'missed' cases occur among those who present with other symptoms.

With the onset of symptoms, patients took a variety of initial actions. A considerable number of patients practiced self-medication or directly purchased nonprescribed medications from pharmacy shops (Figure 2). Self medication has also been identified as a major reason for delayed diagnosis of PTB from various studies. 10-13 The urban part of the sample was significantly more involved in practicing non prescribed medications as compared to rural part where practice of consulting a faith healer (guniya) was more prevalent (Table 2). Meanwhile, they would also seek care at a health care provider. In most cases, the HCP first consulted was formal; however, in more than 34% cases non-formal HCPs probably practicing in the vicinity were consulted. It took three attempts for the 95% of cases to reach a formal HCP. Majority of the cases (86.7%) initially consulted a private health facility for their symptoms. Similar findings were shown by studies from around the world. 10,14-17 This is, in contrast, to study by Jobby et al

where 69.5% patients first went to a government health facilities compared to 30.5% patients who went to private health facilities.² In this study, the health facility first consulted by 86.7% subjects was private but could make diagnosis in only 25% of cases, whereas only 13.3% initially consulted government facility but made diagnosis in 74% cases (Figure 4). This may be because of referral of such patients to government system on observing suggestive symptoms, but detailed study is necessary. A study done in Kuala Lumpur, Malaysia found that TB was not considered in most patients when they consulted their private practitioners and essential investigations such as sputum examination and chest x-ray were often not done. 18 Reasons for patients presenting to private practitioners before public doctors are greater ease of access, shorter waiting periods, longer or more flexible opening hours, better availability of staff and drugs, more sensitive health worker-client attitudes and greater confidentiality in dealing with stigmatized conditions such as TB, more compatible with people's expectations and cultural beliefs.19

Median number of HCP's consulted before reaching a diagnosis was two in this study which is similar to that reported by a systematic review that sorted eight studies from India with similar results. ²⁰ In a hospital-based study done by Salanipouni et al at Malawi, 24% patients were found to have three or more visits before a diagnosis was made. ⁷ More number of HCP's were consulted before reaching the diagnosis of TB when the first consultation was with a private HCP (p<0.001). This may be because the government sector HCP's are more likely to follow the guidelines of RNTCP for investigating suspected TB patients.

'Accessibility' of the private practitioners followed by 'somebody's advice' was acknowledged as the prime reasons for seeking care from private sector compared to inaccessibility and lack of awareness about public sector health care facilities. Our findings are consistent with the findings of Fatiregun et al where reasons given by respondents with prolonged delay included health facility too far 22.2%, lack of awareness of DOTS service ontime 12.7%.²¹

TB stigma and knowledge about TB

Significantly more females than males were ashamed of having TB (p=0.021). A considerable proportion of patients had tried to hide the disease and felt that tuberculosis affected family and marital relations along with work performance. More females than males said that the chances of a girl getting married were less if she had tuberculosis (Figure 9).

More than 58% didn't even heard of TB before their diagnosis. Among those who at least heard of TB before diagnosis, most got the information from their relatives or friends suffering from TB, followed that by television. These were similar to findings by Agboatwalla et al and

Tamhane et al.^{9,22} Only six percent got the information through wall paintings/ posters, this can be due to public being ignorant about surroundings or the matters which they are not directly concerned with. This also suggests that the government's strategy for IEC needs to be improved to make a mark on the common people's understanding. Jobby et al found that most of the patients got (68.3%) to know about RNTCP from the government health sector with mass media contributing only 16.5% of patient's information.² Only 22.2% of individuals correctly knew about how does Pulmonary TB spreads compared to 28% who think TB is hereditary (Figure 8). A considerable number of subjects thought that it spreads by touching, talking with an affected person leading to further stigma. However, most subjects correctly knew that TB is curable and are well versed with the duration of treatment. This probably reflects the good treatment part of the government health facilities.

Limitations

There are possibilities of recall bias, however, we have put in our maximum efforts to minimize this problem. We used local calendar, listing the main religious and national days. Possibility of recall bias is greatly reduced though it is difficult to eliminate it altogether.

CONCLUSION

Cough is the most common, earliest and most irritating symptom in PTB responsible for seeking care. Significant proportions of subjects show self-medication & direct consultation with pharmacy shops as the first action following suggestive symptoms. Study showed that although consultation with private clinics is the first choice of subjects in the present health system but their contribution in diagnosing the illness is far less. Majority (49%) of subjects reached a formal HCP on 2nd attempt. Most were not satisfied by government health care facilities although the contribution of diagnosis of TB by government system was better. Thus, it can be recommended with the above findings to increase the awareness regarding proper first action with the onset of suggestive symptoms, number of government health facilities to be increased with proper reach, efforts to be made for increasing patient satisfaction. Effectiveness of the information education communication activities needs to be monitored, revised and updated in a manner to seek maximum attention of the community.

ACKNOWLEDGEMENTS

Author would like to thank District tuberculosis officer, Jabalpur Dr. C.P. Tiwari, Dr. R K Nayak, M.D., Medical Officer, District Tuberculosis Centre, Jabalpur, for allowing the study. Thank are also due for RNTCP staff including STS's & TBHV's from the study area, Dr Shubhangi, Dr. Surjeet, Dr. Deepak, Dr. Vishnu and finally all the patients without whose cooperation study would not have been possible.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee, N.S.C.B. Government Medical College Jabalpur M.P.

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Cite this article as: Sahu R, Verma P, Kasar PK. Health care seeking behaviour of pulmonary tuberculosis patients in Jabalpur district, Madhya Pradesh. Int J Community Med Public Health 2020;7:521-7.