Original Research Article

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Socio-demographic characteristics of tuberculosis patients registered under RNTCP in urban area of Jodhpur, Rajasthan

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ABSTRACT

Background: Tuberculosis affects all socio-economic persons and has an enormous economic impact on many countries. India accounts for a quarter of the global burden of tuberculosis. It is a chronic stigmatized public health and social challenge in almost all communities of the developing countries. The aim of the present study was to assess the socio-demographic characteristics of tuberculosis patients in urban area and their relation with current tuberculosis epidemiological situation.

Methods: A retrospective type of study was conducted from July, 2010 to September, 2010 in tuberculosis units and data was collected from tuberculosis registers and all patients were interviewed with their consent. All collected data were transferred in a computer and analyzed using Excel worksheet. Tuberculosis patients were not on directly observed treatment, short-course (DOTS) regime and not gave consent, excluded for the study.

Results: In our study, total of 363 tuberculosis patients interviewed in which maximum number i.e., 90 (24.79%) of the study population belonged to the age group 26-35 years, 216 (59.51%) were male, 195 (53.72%) were from urban population, 269 (74.1%) Hindu by religion, 278 (76.58%) married, 139 (38.29%) illiterate, 126 (34.71%) unemployed, 122 (33.61%) belonged to socioeconomic class V, 202 (55.65%) were from nuclear families. 262 (72.18%) patients had pulmonary tuberculosis and 101 (27.82%) had extra-pulmonary tuberculosis Majority of patients 264 (67.77%) were in category-I followed by 81 (22.7%) in category II. And 36 (9.92%) patients were being treated as category-III.

Conclusions: It has a dreadful impact on the economic wellbeing of individual, their families and the entire community.

Keywords: Tuberculosis, Socio-demography, RNTCP, DOTS

INTRODUCTION

Tuberculosis (TB) is a disease of great antiquity that affects all socio-economic persons and has an enormous economic impact on many countries.^{1,2} Globally, the best estimate is that 10 million people developed TB disease in 2017. There was a total of 16 lakhs TB related deaths.³

The estimated incidence of TB in India was approximately 28,00,000 accounting for about a quarter

of the world's TB cases and mortality due to TB (exclude HIV) was 4,23,000.⁴ It primarily affects lungs and causes pulmonary TB. It can also affect other organs like bones, intestine, skin, lymph glands and causes extra-pulmonary TB. Worldwide socio-demographic factors like age, sex, education, occupation, income, life styles etc. play a crucial role in etiology, spread and epidemiological situation of TB. The number of TB patients are increasing due to lack of awareness, fear of death, social stigma, irrational belief etc.⁵ After National TB Control Program (1962) and failure of its achievement, the government of

India with the help of WHO and SIDA adopted the newly developed directly observed treatment, short-course (DOTS) strategy and initiated Revised National Tuberculosis Control Program (RNTCP) in phased manner during 1993, which evolved through pilot phase, DOTS strategy, Stop Tuberculosis Strategy, the National Strategic Plan and currently, The End Tuberculosis Strategy with the vision of Tuberculosis Free World and Goal of Tuberculosis Elimination by 2035. Government of India has shifted its treatment approach from intermittent DOT (regimen) to daily DOT during 2017. So this study was undertaken to find out the profile of socio-demographic factors of TB patients and their relation with current epidemiological status of TB under RNTCP in study area.

METHODS

The study was a retrospective type, carried out at all three TB units of Jodhpur city (KN Chest Hospital, Satellite hospital Paota and DTC Jalori gate) under Department of Community Medicine, SN Medical College, Jodhpur, Rajasthan from 1st July 2010 to 30th September 2010. Patients registered under RNTCP from all three TB units during study period were interviewed after their verbal consent. Information about the name, age, sex, religion, marital status, treatment category, date of start of treatment and outcome were collected from TB registers maintained at all TB units. All the patients were interviewed door to door, at their homes with the help of health visitor. Patient's informed consent form includes information regarding the study which should be provided to patient for their understanding about the study and participation. All collected data were transferred in a computer and analyzed using Excel worksheet. TB patients who were not gave consent or moved out of the area or were not available for interview on three subsequent visits were excluded from the study.

RESULTS

During study period, a total of 363 patients were registered. Of these, 216 (59.51%), were males and 147 (40.49%) were females. Mean age for male and female were 36.7 and 30.5 respectively. Mostly patients 243 (66.94%) were in 15-45 years age group (Table 1). More than 50% (195) patients belonged to urban locality of Jodhpur. It was observed that 74.1% patients belonged to Hindu religion while 25.07% were Muslims. More than three fourth of the study population (76.58%) were married, 14.6% were unmarried and 8.81% were divorced, separated and widow individuals. Education status shows that 139 (38.29%) patients were illiterate and among literate group, majority 22.04% studied upto primary level, 21.21% were educated upto middle level, 12.95% were educated upto higher secondary level and only 5.51% had an education level of graduate or above. Occupational status shows that 34.71% patients were unemployed, 65.29% were employed. Among male patients, most of them were labourer and among female

patients, majority were housewives. More than half study population (55.65%) were nuclear families while rest (44.35%) were from joint families. It was observed that maximum numbers of patients 186 (51.24%) had 4-8 family persons followed by 89 (24.52%) had >8 family persons. Majority of study population that is 33.61% belonged to socioeconomic status class V followed by 26.72% in class IV, 20.38% in class III, 15.15% in class II and 4.13% in class I according to modified BG Prasad classification. 227 (62.53%) patients had habits of alcoholism or smoking or tobacco consumption. Highest number of patients (42.29%) was smoker followed by 32.16% alcoholics and 25.55% were tobacco chewer. Majority of the male patients were smoker and alcoholics; whereas tobacco chewing was the major habit among the female patients 30 (51.72 %) (Table 2).

Table 1: Distribution of patients according to age and sex.

Age (in years)	Males N (%)	Females N (%)	Total N (%)
0-15	07 (30.43)	16 (69.57)	23 (06.34)
16-25	37 (49.33)	38 (50.67)	75 (20.66)
26-35	44 (48.89)	46 (51.11)	90 (24.79)
36-45	58 (74.36)	20 (25.64)	78 (21.49)
46-55	39 (81.25)	09 (18.75)	48 (13.22)
56-65	12 (54.54)	10 (45.46)	22 (06.06)
>65	19 (70.37)	08 (29.63)	27 (07.44)
Total	216 (59.51)	147 (40.49)	363 (100)

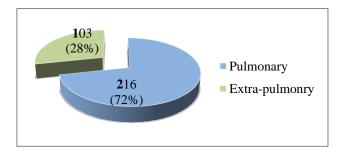


Figure 1: Distribution of patients according to types of TR

In the type of TB, 262 (72.18%) patients had pulmonary TB and 101 (27.82%) had extra-pulmonary TB (Figure 1).

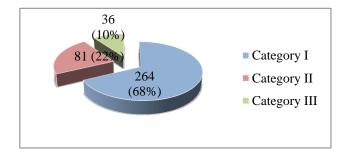


Figure 2: Category of TB patients.

Majority of patients 264 (67.77%) were in category-I. 81 (22.7%) patients had past history of TB and treated for the same, so they were classified as category-II. Only 36 (9.92%) patients were being treated as category-III (Figure 2).

Table 2: Socio-demographic profile of tuberculosis patients (n=363).

Characteristics	Frequency	%		
Locality				
Rural	168	46.28		
Urban	195	53.72		
Religion				
Hindu	269	74.1		
Muslim	91	25.07		
Others	3	0.82		
Marital status				
Married	278	76.58		
Unmarried	53	14.6		
Others	32	8.81		
Education				
Illiterate	139	38.29		
Primary	80	22.04		
Middle	77	21.21		
Higher secondary	47	12.95		
Graduate or above	20	5.51		
Occupation				
Unemployed	126	34.71		
Employed	237	65.29		
Type of family				
Nuclear	202	55.65		
Joint	161	44.35		
No. of family members				
1-4	88	24.24		
5-8	186	51.24		
>8	89	24.52		
Socio-economical class (modified BG Prasad classification)				
I	15	4.13		
II	55	15.15		
III	74	20.38		
IV	97	26.72		
V	122	33.61		
Social habits (n=227)				
Smoking	96	42.29		
Alcohol	73	32.16		
Tobacco	58	25.55		
1 304000		20.00		

DISCUSSION

TB is found to be more common in males about 60% (216) and in female about 40% (147). Parmar et al in Rajkot, Gujarat also found that 68.08% were males and 31.92% were females; these being comparable with our study. The higher proportion of male could be because of their higher chances of exposure to sources of TB

infection. The present study found that TB affects the most productive age group. Overall, 291 patients (80.16%) were in economically productive (15-54 years) age group. This is in concordance with study done by Quy in Vietnam, where 79.49% of patients were in 15-54 years and 21.51% were above 55 years.⁸

53.7% (195) study population were belonged to urban area and 74.1% (269) were Hindu by religion. Study done by Vashney et al (2010), 74% of the study participants were Hindus by religion.⁹

There were 76.58% (278) had married life in our study. Suhadev et al also found similar results that mostly patients 39 (63%) were married, 16 (26%) were unmarried, 5 (8%) were divorced and 2 (3%) were widower. ¹⁰

About 62% patients were literate and 38% were illiterate. Muniyandi et al found similar results that 43% were illiterate and 67% were literate. Educational status of the community is very key factor for the success or failure of the treatment in TB. Health seeking behaviour of individual depends on the educational level.

There were 34.71% unemployed and 65.29% were employed patients. Mishra et al also found similar results that 15.06% students, 38.78% unemployed or housewives, 14.10% unskilled labour, 18.27% skilled labour, 13.78% were service class in their study. Employment status affects the treatment outcomes as well as treatment adherence.

Persons who were having socioeconomic class I, found to be less TB 4. 13% (15) and highest patients 33.61% (122) had class V. TB was more commonly found in those families who had low socioeconomic status. Chadha et al also found majority of patients 79.00% belonging to lower socio-economic class. This can be attributed to the fact that the persons of lower socio-economic status live in over-crowded and ill-ventilated and localities.

It was observed that 62.53% (227) has habits of alcoholism or smoking or tobacco consumption. Subodh et al found that 50% were smokers, 20% were alcoholic and 5% were drug abusers. Definitely smoking, alcoholism and tobacco chewing have a negative impact on treatment outcome as they increase the side effects due to anti tubercular drugs which decrease the compliance. Cigarette smoking is known to damage the lungs and suppress the individual adaptive immune responses affecting patient's response to TB treatment and alcohol suppresses the immune response and alcoholics are more likely to forget taking their treatment and hospital appointments leading to interruptions.

It was observed that majority of patients were suffering from pulmonary TB 71.62% (260), whereas 28.37% (103) had extra pulmonary TB disease. Velingker et al found that mostly patients 69.1% were having pulmonary

manifestation of TB, while 30.9%% patients had extra pulmonary TB disease. ¹⁵ Recent studies have suggested that the sites of extra-pulmonary TB (EPTB) may vary according to geographic location and population. It is well known that lymph node and pleural involvement in TB is a direct extension of the disease from lung parenchyma.

It was observed that mostly patients 67.77% (264) were in category I followed by 22.7% (81) in category II and only 9.92% (36) in category III. Thejeshwari et al found similar result that mostly patients 60.16% belonged to category-I; 17.08% and 22.76% were belonged to category-II and category-III respectively. 16

CONCLUSION

TB is an infectious disease which spread from one person to another person. It has a devastating impact on the economic wellbeing of individual, their families and the entire community. Our study concludes that proportion of TB is found to be significantly higher in male, in pulmonary TB group and in age group up to 34 years when compared with their counterparts. Age break-up indicated about more than half of the patients (66.94%) in reproductive age groups i.e., 15 and 44 years.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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