Original Research Paper

Community Medicine

SOCIO-DEMOGRAPHIC AND HEALTH PROFILE OF MULTI DRUG RESISTANT TUBERCULOSIS PATIENTS ADMITTED IN MDR-TB CENTRE OF RANCHI, JHARKHAND,INDIA

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ABSTRACT **BACKGROUND:** Multi-drug resistant tuberculosis has become major public health problem and obstacle to effective control of tuberculosis. Our Objective was to study the socio-demographic and health profile of multi drug resistant tuberculosis patients admitted in MDR-TB centre ITKI Sanatorium, Ranchi Jharkhand. **MATERIALS AND METHODS :** It was a hospital based cross sectional descriptive study carried out from August 2016 to Nov.2018 on Multi drug resistant tuberculosis patients admitted in MDR-TB centre Itki Sanatorium Ranchi after approval from institutional ethics committee.**RESULTS:** Out of 64 study subjects majority among them were male 48 (75%) followed by female 16 (25%), 16 (25%) were lying in 15-24 yrs and 25-34 yrs group, followed by13 (20.3%) in 35-44 yrs age group, 8 (12.5%) in 45-54 yrs age group,& 7 (10.9%) in 55-64 yrs age group. Education wise, most of study subjects (22, 34.4%) patients were educated up to secondary level followed by illiterates (16, 25%) and primary (11, 17.2%). Some (10, 15.6%) patients were having education up to higher secondary level and some (05, 7.8%) having up to graduation and above.In the study most of the affected persons 18 (28.1%) belonged to daily wages, followed by 17 (26.6%) were house wives , private jobs 12 (18.8%), self employed 8 (12.5%), student 4 (6.3%), farmer 3 (4.7%) and industry/factory worker 2 (3.1%). Most of the study subjects 27 (42.2%) were in lower middle class, 14 (21.9%) were in middle class, 11 (17.2%), 8 (12.5%) and 4 (6.3%). Tuberculosis is related to poverty of the people Out of 64 study subjects, maximum 46 (71.9%) belonged to underweight category followed by 16 (25%) to normal range category and 2 (3.1%) to overweight category.,maximum of the study subjects 38 (59.4%) were belong to weight band category (26-45 kg), followed by 23 (35.9%) to weight band category (46-70kg), and equal distributions 1 (1.65%) for remaining weight band categories .**CONCLUSION:** Males contributed to a majority of cases with by the age group 25-34 years. Almost all of the patients were suffering from different co-morbidities.

INTRODUCTION

Tuberculosis has remained major global problem and is ninth leading cause of death worldwide and leading cause from single infectious agent[1].Patients with MDR-TB required longer duration and costly treatment resulting social isolation , loss of employment, long term socioeconomic effects and experience higher mortality[2].Adverse drug reactions on second line anti tuberculosis drugs and poor management of adverse drug reactions led to irregular adherence of treatment, increasing risk of default and may lead to death and permanent morbidity[3]. Over a period of time, there are several landmark achievements including policy and system preparedness for universal access to TB care including mandatory notification of TB cases. ,development of standard for TB care in India, comprehensive real time TB information management system-NIKSHAY, use of rapid molecular diagnostics, successful innovations in private sector engagement for TB care-Universal access to TB care. Considering all socio-economic factors the present study was designed to socio-demographic and health profile of multi drug resistant tuberculosis patients getting admitted in MDR-TB Centre ITKI Sanatorium.

MATERIALS AND METHODS

Place Of Study: The present study was carried out at ITKI Sanatorium of Ranchi district of Jharkhand. **Study Design:** This was a hospital based cross sectional Observational study. **Study Period:** Total duration of study: 28 months i.e. August 2016 to Nov 2018

Inclusion Criteria:-
A)All MDR-TB patients of Ranchi district transferred to ITKI Sanatorium through government health facility channels who are willing to participate were included after taking written informed consent

Exclusion Criteria:-
a) X-DR TB patients
b) Patients not willing to participate

Sample Size:
Total no. of MDR-TB patients of Ranchi district getting admission for pre-treatment evaluation for MDR-TB between September 2017 to August 2018 were 73, Among 73 patients, 6 patients were of XDR-TB and 3 patients were non co-operative. So the final sample size came out to be 64. All the patients were interviewed in ITKI Sanatorium Ranchi.

Sampling Technique:
The sampling method used in the study was consecutive sampling.

Data Collection Techniques:
The subjects were explained about the purpose of study. Data was collected by interview method using the pre tested semi-structured questionnaire. Interview was done after taking informed consent from each of the study subjects

Data Entry and Analysis :
A standard template was created in Microsoft-Excel sheet for data entry. Data entry was done and 10% of data were

randomly checked to assure the quality of data entry under the supervision of Guide. The data were analyzed by using software- Statistical Package for Social Science (SPSS) 20.0 version

RESULTS

Table 1:Socio demographic profile of MDR-TB patient   (n=64)

Sl. No.	Variable	Category	Frequency	Percentage (%)
1	Gender	Male	48	75.0
		Female	16	25.0
		Total	64	100.0
2	Age	<15 yrs	4	6.3%
		15-24 yrs	16	25%
		25-34 yrs	16	25%
		35-44 yrs	13	20.3%
		45-54 yrs	8	12.5%
		55-64 yrs	7	10.9%
		Total	64	100
3	Religion	Hindu	38	59.4
		Muslim	15	23.4
		Christian	10	15.6
		Sarna[*]	1	1.6
		Total	64	100
4	Ethnicity	Tribal	11	17.2
		Non-Tribal	53	82.8
		Total	64	100
5.	Type of Family	Nuclear	28	43.8
		Joint	36	56.3
		Total	64	100

*Local religion of Jharkhand

Out of 64 study subjects majority among them were male 48 (75%) followed by female 16 (25%), 16 (25%) were lying in 15-24 yrs and 25-34 yrs group, followed by13 (20.3%) in 35-44 .

According to 2001 census, tribal population of Jharkhand constitutes 26.3% of the total population of the state and in Ranchi district 41.8-44.6% of tribal populations are present. In study subjects of MDR-TB patients the mean age (SD) of my study subjects were 33.33 (13.73) years in which minimum age was 6 years and maximum age was 62 years.

Table 2: Showing distribution according to educational status of patients (n=64)

Educational status	Frequency	Percentage (%)
Illiterate	16	25
Primary	11	17.2
Secondary	22	34.4
Higher Secondary	10	15.6
Graduation & above	05	7.8
Total	64	100.0

Education wise, most of study subjects (22, 34.4%) patients were educated up to secondary level followed by illiterates (16, 25%) and primary (11, 17.2%). Some (10, 15.6%) patients were having education up to higher secondary level and some (05, 7.8%) having up to graduation and above.

Table 3: Distribution of study subjects according to occupation (n=64)

Types of occupation	Frequency	Percentage (%)
Student	4	6.3
Private job	12	18.8
Farmer	3	4.7
Self employed	8	12.5
Daily wages	18	28.1
Industry/factory	2	3.1
House wife	17	26.6
Total	64	100

In the study most of the affected persons 18 (28.1%) belonged to daily wages, followed by 17 (26.6%)   were house wives , private jobs 12 (18.8%), self employed 8 (12.5%), student 4 (6.3%), farmer 3 (4.7%) and industry/factory worker 2 (3.1%).

Table 4: Socio - economic status of patients* (n=64)

Socio – economic status	Frequency	Percentage (%)
Upper class (≥6346)	04	6.3
Upper middle class(3173-6345)	11	17.2
Middle class (1904-3172)	14	21.9
Lower middle class (952-1903)	27	42.2
Lower class (≤951)	8	12.5

*according to Modified B.G.Prasad classification 2016

Most of the study subjects 27 (42.2%) were in lower middle class, 14 (21.9%) were in middle class, 11 (17.2%), 8 (12.5%) and 4 (6.3%). Tuberculosis is related to poverty of the people.

Table 5 : Distribution of Patients According to BMI (n=64)

Category of BMI	Frequency	Percentage (%)
Underweight (<18.5)	46	71.9
Normal range (18.50-24.99)	16	25
Overweight (≥25.00)	2	3.1
total	64	100

Out of 64 study subjects, maximum 46 (71.9%) belonged to underweight category followed by 16 (25%) to normal range category and 2 (3.1%) to overweight category.

Table 6: Distribution according to weight band category for the treatment of MDR-TB patients (n=64)

Weight band category (kg)	Frequency	Percentage (%)
<16	1	1.6
16-25	1	1.6
26-45	38	59.4
46-70	23	35.9
>70	1	1.6
Total	64	100

In my study,maximum of the study subjects 38 (59.4%) were belong to weight band category (26-45 kg), followed by 23 (35.9%) to weight band category (46-70kg), and equal distributions 1 (1.65%) for remaining weight band categories.

Table 7: showing distribution of diseases among study subjects (N=64)

Types of diseases	Frequency	Percentage (%)
COPD	8	12.5
PSYCHIATRIC DISEASE	5	3.12
Diabetes Mellitus Type-II	14	21.87
Hypertension	10	15.62
Fungal disease	24	37.2
Viral disease	3	4.68
Total	64	100

Among study subjects, 24 (37.2%) had fungal disease, 14 (21.87%) had diabetes, 10 (15.62%) had COPD diseases, 5 (3.12%) had psychiatric disorder and 3 (4.68%) had viral diseases.

Table 8: showing distribution according to smoking pattern (n=64)

History of smoking	Frequency	Percentage (%)
YES	19	29.7
NO	45	70.3
Total	64	100

Among all history of smoking was present in 19 (29.7%) study subjects followed by history of non-smoking in 45 (45%) study subjects. It was showing that there was no association between the habit of smoking and development of MDR-TB

DISCUSSION

Most of the study subjects were male belonging to rural areas and non tribal ethnicity. Mostly patients were married and were from lower middle class of socioeconomic status scale according to modified BG Prasad classification 2016.Majority of patients 16 (25%) were lying in 15-24 yrs and 25-34 yrs, respectively followed by13 (20.3%) in 35-44 yrs, 8 (12.5%) in (12.55%),7 (10.9%) and o (0%) in more than 64 yrs. Similar findings were found in studies conducted by Jethani et al, Sumana et al, Sunderam et al and Christian et al where proportion of male patients were 74.8%, 70.5%, 71.1% and 68% respectively.[4-7] The mean age (SD) of my study subjects were 33.33 (13.73) years in which minimum age was 6 years and maximum age was 62 years. Patients below 15 yrs were 6.3%, between 15-24 yrs were 20%, between 25-34 yrs were 24%, between 35-44 yrs were 23%, between 45-54 yrs were 19%, between 55-64 were 10% and more than 64 yrs were 1%..Most of the affected persons 18 (28.1%) belonged to daily wages, followed by 17 (26.6%) were house wives or not specified, private jobs 12 (18.8%), self employed 8 (12.5%), student 4 (6.3%), farmer 3 (4.7%) and industry/factory worker 2 (3.1%).Most of them 27 (42.2%) belonged to lower middle class, followed by 14 (21.9%) belonged to middle class, 11 (17.2%) upper middle class, 8 (12.5%) lower class and o4 (6.3%) to upper class46 (71.9%) subjects belonged to underweight category followed by 16 (25%) to normal range category and 2 (3.1%) to overweight category. The mean weight was found to be 33.33 Kg (SD 13.73). In present Study 24 (37.2%) had fungal disease, 14 (21.87%) had diabetes, 10 (15.62%) had COPD diseases, 5 (3.12%) had psychiatric disorder and 3 (4.68%) had viral diseases similar findings were found in studies in Pondicherry.[8-11]

CONCLUSION

In present Study two third of the patients were male under the age group of 15-44 years.Mostly were found educated up to secondary level. More than half of the study subjects belonged to joint family. Among all approx half of the patients belonged to lower middle class, according to Modified B G Prasad classification 2016. Almost all of the patients were suffering from different co-morbidities.

Ethical approval:

Ethical approval for the study was obtained from Institutional Ethics Committee of RIMS, Ranchi. Interview with study subjects were conducted after written informed consent in Hindi language.

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