PACIFIC JOURNAL OF MEDICAL SCIENCES

{Formerly: Medical Sciences Bulletin}

ISSN: 2072 – 1625

Pac. J. Med. Sci. (PJMS)

www.pacjmedsci.com. Email: pacjmedsci@gmail.com.

SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH SPUTUM POSITIVITY RATES FOR TUBERCULOSIS IN PATIENTS WITH COUGH IN SRINAGAR HOSPITAL, INDIA

HAMID SHAMILA, * SYED A H ANDRABI AND ALI IMTIYAZ

Dept. of Community medicine, SKIMS Srinagar India,* Department of Medicine, DH Pulwama Multispeciality Hospital J & K India

*Correspondence Author: syed.arshadhussain@yahoo.co.in.

SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH SPUTUM POSITIVITY RATES FOR TUBERCULOSIS IN PATIENTS WITH COUGH IN SRINAGAR HOSPITAL, INDIA

HAMID SHAMILA, * SYED A H ANDRABI AND ALI IMTIYAZ

Dept. of Community medicine, SKIMS Srinagar India,* Department of Medicine, DH Pulwama Multispeciality Hospital J & K India

***Correspondence Author: syed.arshadhussain@yahoo.co.in.**

ABSTRACT:

More women die of tuberculosis than any other infectious disease. The social stigma of the disease adds to the burden of both men and women, particularly if the disease occurs in their youth. The objective of this study was to assess the various socio-demographic factors influencing sputum positivity rates in cough symptomatic. This was a cross sectional hospital based study in which a specially designed proforma was used to collect information regarding socio-demographic characteristics of sputum positive tuberculosis patients. Higher sputum positive rate was seen in chest symptomatic above 55 years of age. Sputum positivity rates were also high among illiterates, patients belonging to socio-economic class IV, patients who had no history of contact and had no family history of tuberculosis. Our data indicates the need for increased vigilance among the vulnerable groups in Srinagar.

Key words: cough symptomatic, sputum positivity, socio-demographic characteristics, tuberculosis

Received: November 2011; Accepted: March 2012

INTRODUCTION:

Tuberculosis (TB) continues to be one of the most important public health problems worldwide [1]. It kills more women in reproductive age group than all other causes of maternal mortality combined, and it may create more orphans than any other infectious disease. The indirect impact of TB on children is considerable, as nearly one-fifth of school-age children of TB patients either leave school

or take up employment to help support their families [2]. According to Pandit [3], "TB is a social disease". The social stigma of the disease adds to the burden for both men and women. Men have to deal with the stigma at their work-places and in the community while women are ostracized in the house-hold and neighborhood [4]. The disruption caused to society and the economy is incalculable. A patient with TB takes an average of 3 or 4 months to recuperate, losing that much of income. The loss is disastrous for those struggling against poverty and under-development [5]. According to Biggs [6] the homeless, friendless dependent, dissipated vicious consumptive individuals are likely to be most dangerous to the community. This study was designed to assess the various socio-demographic factors of sputum positive patients. The objective was to assess the various socio-demographic factors influencing sputum positivity rates among patients screened for TB.

PATIENTS AND METHODS:

This was a hospital based cross sectional study carried out using a standardized protocol in the district TB centre chest disease hospital, Srinagar, India. A pretested structured proforma was used for data collection. The study was conducted from December 2008 to June 2010. During this period a total of 2810 patients were screened for TB and all of them were recruited for the study. Data was collected from all the patients with sputum TB positive reports. Pre-trained and properly briefed laboratory staff members collected appropriate information and filling of proforma for patients with sputum TB positive results. Information collected included age, sex, residential address, history of (H/O) contact, family H/O TB status, number of family members, and type of family, smoking habits, level of education, income and occupation. The educational, occupational and income status of the patients were assessed by the modified Kupuswamy's method [7, 8]. This method is a socio-economic scale that uses three variables: education, occupation and income. The data so collected was subjected to statistical analysis.

Some modified terms have been used in the present study. "Cough symptomatic" refers to patient presenting with cough to the out-patient department (OPD) as defined by the Revised National Tuberculosis Programme in India (RNTCP). "Suspected case" is a patient seen in the OPD with a history of cough of ≥ 2 weeks. "Smear positive case", refers to a patient in the OPD with at least two sputum specimen positive for acid-fast bacilli (AFB) by Zeihl-neelsen sputum microscopy. "Sputum positivity", is when at least three AFB's are seen in 100 Oil immersion fields of smear.

RESULTS:

A total of 70,000 new adult patients attended the OPD during the study period. The total number of patients referred to the laboratory for sputum microscopy was 2810, which is equivalent to 4.0% of the total OPD attendees. Among the 2810 cough symptomatic, 367 were sputum positive, giving sputum positivity rate of 13.1%. The highest number (31.1%) of patients screened in the OPD was in the ≥55years age group (Table 1). Of the 367 patients with sputum positivity, the highest prevalence rate (26.4%) was among the cough symptomatic in the ≥55years age group, followed by the 15 to 24years age group (24.5%) and 25 – 34years age group (24.0%). Gender distribution shows that more males (53.2%) were screened compared to females (46.8%). There was no difference in the prevalence of Sputum positivity rate among the male and female patients (Table 1).

Table 1: Distribution of patients according to age and gender

Age groups (yrs)	Distribution of patients screened at OPD (n = 2810)	Distribution of patients with sputum positivity (n = 367)
<14	112 (4.0%)	19 (5.2%)
15 – 24	475 (16.9%)	90 (24.5%)
25 – 34	509 (18.1%)	88 (24.0%)
35 – 44	410 (14.6%)	39 (10.6%)
45 – 54	429 (15.3%)	34 (9.3%)
≥55	875 (31.1%)	97 (26.4%)
Gender distribution		
Males	1495 (53.2%)	184 (50.1%)
Females	1315 (46.8%)	183 (49.9%)

Sputum positivity rate was higher in illiterates (61%) compared to the literates (39%). Regarding socio-economic status, the highest (86.1%) sputum positivity rate was among the class IV group. As can be seen in Table 2, sputum positivity rate was higher among the cough symptomatic in the nuclear family (56.4%) compared to the joint family (43.6%).

Prevalence of sputum positivity rate was highest (66.2%) among the smokers and lowest (3.3%) among the past smokers. Sputum positivity rate among patients with H/O contact was only 9.8%, while Sputum positivity rate was 26.2% among patients who had family H/O TB.

Table 2: Distribution of patients according to social status and risk factors

		Distribution of patients screened at OPD (n = 2810)	Distribution of patients with sputum positivity (n = 367)
Literacy status	Illiterates	1866 (66.4%)	224 (61.0%)
	Literates	944 (33.6%)	143 (39.0%)
Educational status	Illiterates	1866 (66.4%)	224 (61.0%)
	Primary	124 (4.4%)	16 (4.4%)
	Secondary	603 (21.5%)	102 (27.8%)
	Higher	217 (7.7%)	25 (6.8%)
Socioeconomic status (SE)	Class II	125 (4.4%)	15 (4.1%)
	Class III	393 (14.0%)	35 (9.5%)
	Class IV	2275 (81.0%)	316 (86.1%)
	Class V	(0.6%)	1 (0.3%)
Family type	Nuclear	1549 (55.1%)	207 (56.4%)
	Joint	1261 (44.9%)	160 (43.6%)
Life style	Smokers	843 (30.0%)	112 (30.5%)
	Past smokers	140 (5.0%)	12 (3.3%)
	Non-smokers	1827 (65.0%)	243 (66.2%)
Risk factors	H/O contact	174 (6.2%)	36 (9.8%)
	Family H/O TB	620 (22.1%)	96 (26.2%)
	Patients with no history of contact and family history	2016 (71.7%)	235 (64.0%)

DISCUSSION:

In our study observing high sputum positivity rates in productive age groups is in conformity to earlier findings reported by Godoy et al [9]. The highest sputum positivity found in age groups 55 and above in our study is noteworthy because sometimes TB as a cause of cough in older groups may be ignored and chest symptomatic in this age group may be treated for other chronic respiratory tract infections (like asthma, chronic bronchitis, emphysema) which are of major importance in the upper decades of life [10]. A high suspicion /vigilance for the older age-groups attending the health facility with history of cough are required.

In our study we observed no difference in sputum positivity rates among the male and female patients, which is consistent with earlier study by Chandrasekhar et al.[11] Sputum positivity rate in our study was high among illiterates as compared to literates. This is in contrast to studies by Krishnada et al [12] and Olumuyiwa et al [13].

The higher rates in illiterates may be attributed to lack of community awareness. Interestingly among the literates, higher sputum positivity rate was observed in those having secondary level of education which is consistent with the findings from the study by Olumuyinwa et al [13]. Highest sputum positivity rate was prevalent among patients in the socio-economic class IV; these findings are consistent with observations report by Krishneda et al [12]. Sputum positivity rates were higher among the nonsmokers compared to smokers; this indicates that attention should also be given to non-smokers as well. Patients with no H/O contact and negative Family H/O of TB are another high risk groups that need immediate attention for screening in OPD settings [1, 5]. This is reinforced with the findings of the present study that recorded high sputum positivity rate among chest symptomatic having no H/O contact and with no family H/O TB. Thus, this emphasizes the need for vigilance in those who have no H/O contact and or no family H/O TB.

CONCLUSION & RECOMMENDATIONS:

Higher sputum positivity rates were seen in age group above 55years. High sputum positivity rates were found in illiterates and those belonging to SE Class IV. Patients with no H/O contact and/or no family H/O TB are also susceptible to risk of acquiring TB.

Our data indicates that there should be high suspicion and increase vigilance for cough symptomatic among all groups, which include patients above 55years, illiterate, belonging to the lower SE class; and also to those with no H/O contact and /or with no family H/O TB.

REFERENCES:

1. WHO (2000), Research for Action, Understanding and controlling Tuberculosis in India.
2. Kishore J: revised National Tuberculosis Control Programme (RNTCP), DOTS Strategy in; National Health Programmes of India 7th Ed., Kishore J, Century Publications; 2007, 173-199.
3. Enarson DA, Grosser J & A Mwinge. The Challenge of Tuberculosis: Statements on Global Control & Prevention Lancet; 1995; 346: 809.
4. Pandit C.G. Research in Tuberculosis in India; Ind. J. Tub.1956; 4 (1):1-6.

5. Tuberculosis India 2006 RNTCP Status Report, Central Tuberculosis Division, Directorate General of Health Services, ministry of Health and Family welfare.
6. Biggs, HM. the Administrative Control of Tuberculosis, Medical News 1904; 84: 337-345
7. Kumar NC. Shekhar P Kumar and AS Kundu. Kuppuswamy Socioeconomic status scale. Indian journal of Paediatrics 2007; 74:1131
8. Mishra D, Singh HP, S Kuppuswamy. Socioeconomic status scale. Indian J Pediatr 2003; 70 (3): 273-274.
9. Godo y P, Dominguez A, Alcaide J, Camps N, Jansa J, Minguell SM et al. Patients belief regarding tuberculosis & its outcome. European Journal of public health.2001; 14(10): 71-75.
10. Park: "Preventive Medicine and Geriatrics" in Park text book of preventive and social medicine; 19th ed. Park, Banarsidas Bhanot Publishers, 2007; 476.
11. Chandersekhar T Sreera. Comparison of pulmonary and extra pulmonary tuberculosis in Nepal. BMC infectious Dis. 2008; 8: 8.
12. Krishneda, Bhattacharya, Rama Ram.; Perceptions and practices of sputum positive pulmonary tuberculosis patients regarding their disease and its management NTI Bulletin 2005; 41 (1&2): 11-17.
13. Olumuyiwa O .Odusanya and Joseph O Babafemi. Patterns of delays amongst pulmonary tuberculosis patients in Lagos, Nigeria. BMC Public Health 2004, 4:18.