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How Relevant Are Social Factors In Tuberculosis? A Study In A DOTS Centre Of A Kolkata Slum.

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Abstract :
Introduction: India is the highest TB burden country accounting for one fourth (26%) of global incidence. In India tuberculosis accounts for 17.6% of deaths from communicable diseases. Social problems like poverty , poor housing, malnutrition ,addiction & co-morbidities like Diabetes Mellitus,HIV make this scenario more grave. Age-old stigma associated with tuberculosis leading to social isolation and in turn negative approach to seek medical care. With the above backdrop a study was conducted to find out the socio-demographic characteristics among tuberculosis patients attending a DOTS centre of a slum of Kolkata along with social stigma and discrimination experienced by these patients. Methods: Study was conducted in six months period with 111 registered patients at DOTS centre of UHC, Chetla in a cross sectional way. Results:Most of the study population was in productive age group ,literacy level was not satisfactory, belonging to poorer section of society ,underweight prevalence was high, with problems of inadequate ventilation ,illumination and overcrowding . Majority of them (67.5%) were newly diagnosed and of the retreatment cases, only 33% had completed the treatment before. Though all of them informed their family about the disease,27.5% & 36.3% did not disclose it to friends & neighbours respectively.Forty-four percent of them experienced discrimination, mostly from neighbours.Conclusion: For a successful control of tuberculosis, awareness generation regarding its prevention, management and the fact that it is completely curable is very essential. If such message is rooted among all, then stigma and discrimination related to this disease will disappear from the society

Key words:social determinants,social stigma,Tuberculosis

INTRODUCTION: Tuberculosis is a major public health problem globally,especially in India. India is the highest TB burden country accounting for one fourth (26%) of the global estimate of 8.6

million TB cases in 2012 i.e. harbouring 2.2 million cases(1). On a national scale, the high burden of TB in India is illustrated by the estimate that TB accounts for 17.6% of deaths from communicable disease and for 3.5% of all causes of mortality(2).Mortality due to TB was 2.7 lakhs annually in 2012 in India(3).

Many social causes like poverty, poor ventilation and overcrowding in homes, workplaces, and communities,malnutrition, addictions etc contribute to this disease(2,4,5).There are other diseases like HIV infection, Diabetes Mellitus, silicosis etc which often predispose TB(4). With the emergence of MDR TB & XDR TB in India,there is need to look at root causes of this major disease. The Government of India is implementing RNTCP to control TB in the country. But unless the risk factors are addressed it is unlikely that TB will be eliminated in this country. There is also age-old social stigma associated with TB, largely because of severity of the disease,risk of transmission of TB to others and as it occur more frequently among population perceived to be different or deviant(6).Stigma in turn may lead to isolation from friends or family, exclusion from community activities,loss of jobs and prevent patients from seeking medical care(7,8).So TB control strategies should encompass addressing all these issues to be successful.

With the above backdrop this study was conducted to find out the social determinants contributed to tuberculosis among the TB patients of Chetla UHC ,Kolkata.It was also aimed
to assess the social stigma and discrimination experienced by the TB patients of the above centre.

Body Text:

Materials and Methods:

An observational, descriptive community based epidemiological study was conducted with cross-sectional design. All the registered patients of Urban Health Centre, Chetla who were getting treatment during the period of study (February 2013—July 2013) were included in the study after getting informed consent from them. Thus 111 patients were studied by complete enumeration method. Data was collected for a period of six months.

The patients were interviewed with the help of a pre-designed, pre-tested semi-structured schedule in the local language (Bengali).Its face and content validity was ensured by the public health experts of the Institute. It was made very simple, unambiguous and conformed to the objectives of the study. The schedule contained the following

1. Weight and height measurements
2. Questions to elicit the socio-demographic and behavioral characteristics
 like age, sex, education level, occupation, PCI, Socio-economic status (modified Kuppuswamy scale 2013) , overcrowding, inadequate ventilation, addiction to alcohol and smoking,
3. Questions to elicit past history of TB and contact with TB patients
4. Questions to elicit disclosure status and experience of discrimination

Ethical clearance:

The study was approved by the Institutional Ethical Committee(IEC) of AIIH&PH,Kolkata.

Analysis of Data:

Data were entered in Microsoft excel worksheet,compiled and analyzed by SPSS (19 version).The association between categorical variables was tested by Chi-square test statistic.A p value of <0.05 was considered as statistically significant.

Result and Discussion:

Result:

A total of 111 TB patients were studied, most of them were of 20-49 yrs age (70.3%) and only three patients were children. Male patients outnumbered females (64% vs 36%).Their literacy level was also poor-22.2% were illiterate, 30.6% and 33.3% studied up to primary level and middle level respectively. No one studied beyond higher secondary level. Majority of them belonged to low socio-economic status. Most were unskilled and semiskilled workers (75.8%) and again most(62.2%) had PCI of Rs 350—Rs 949 only, while 56.7% belonged to upper lower class, 16.3% belonged to lower class and the rest belonged to lower middle class according to Modified Kuppuswamy scale 2013.

It was very sad that 64.8% patients were underweight and 8.1% had severe thinness. Overcrowding and inadequate ventilation in their houses were present in 88.9% and 62-2% respectively. About 48.6% of the study population had past experience of contact with TB cases and 32.5% patients had past history of TB(ie Cat II).And 67.5% were new cases(ie Cat I).42% patients had smoking habit (62.5% of male patients); 44% were alcoholic(66% of male patients) and 47% were smokeless tobacco users**.** No female patient consumed alcohol or used tobacco. Only three patients(2.7%) were found HIV Positive in this study. **(Table I)**

Among those who had past TB,50% was not put on DOTS,58 % took ATD irregularly and only 33% completed the treatment.And 82% patients continued addiction to alcohol and/or smoking. **(Table II)**

All patients disclosed their disease status to family members;72.5% disclosed to close friends and 63.7% disclosed to neighbours.Fifteen patients(44%) experienced discrimination, mostly from neighbours (29.4%). **(Table III)**

Tables

Table I: Distribution of study population according to socio-demographic profile and social determinants of TB(n=111).

Criteria	Frequency	Percentage
Sex Male	71	64
Female	40	36
Age(yrs)		
<10	3	2.7
10—19	9	8.1
20—29	33	29.7
30—39	21	19
40—49	24	21.6
50—59	6	5.4
=>60	15	13.5
Education level n=108		
Illiterate	24	22.2
Primary	33	30.6
Middle	36	33.3
Secondary	6	5.6
Higher secondary	9	8.3
Occupation n=99		
Unskilled worker	39	39.4
Semiskilled worker	36	36.4
Skilled worker	9	9.1
Unemployed	15	15.1
PCI(Rs)		
Lowest quartile(350—949)	69	62.2
Second quartile(950—1549)	30	27
Third quartile(1550—2149)	6	5.4
Upper quartile(2150—2750)	6	5.4
Socio economic status (Modified Kuppuswamy scale 2013)		
Lower middle class(Gr III)	30	27
Upper lower class(Gr IV)	63	56.7
Lower class(Gr V)	18	16.3
BMI		

=>25 (Overweight) 18.5-24.99 (Normal) <18.5 (Underweight) (17-18.49=mild thinness 16-16.99=moderate thinness <16=severe thinness)	6 33 72 24 39 9	5.4 29.8 64.8 21.6 35.1 8.1
Overcrowding Yes **No**	96 15	88.9 11.1
Ventilation Adequete **Inadequete**	42 69	37.8 62.2
H/o Contact with TB cases Yes **No**	54 57	48.6 51.4
Past H/o TB Yes(Cat II) **No(Cat I)**	36 75	32.5 67.5
Addictions Smoking Yes **No** **Alcohol Yes** **No**	45 63 48 60	42(62.5*) 58 44(66.6*) 56

*percentage among total male patients

Table II. Distribution of the study population according to factors related to repeated Tuberculosis(**Cat II**).n=36

Relevant factors	Frequency	Percentage
Not put on DOTS in the past	18	50
Irregular drug intake in the past	21	58
Not completed treatment in the past	24	67
Continued addiction to alcohol and/or smoking(n=28*)	23	82

***those patients who were addicted to alcohol and/or smoking before first episode of TB

Table III.Distribution of the TB patients as per Disclosure and Experience of Discrimination (n=102)*.

Criteria	Frequency	Percentage
Disclosure to		
All family members	102	100
Close friends	74	72.5
Neighbours	65	63.7
Experience of discrimination (from)	45	44
Family members	6	5.8
Close friends	9	8.8
Neighbours	30	29.4

Multiple response—total percentage may not add up to 100%

*Nine cases were interviewed on the first day of DOTS therapy----they were excluded for obvious reasons.

Discussion:

The study population included 64% male and 36% female,consistent with national scenario of two-

thirds cases in males(9).In this study 70% cases were found in adult population of age 20—49 yrs as compared to around 80% TB patients in 15-54 yrs agegroup in India(9).And 2.7% cases were children as compared to 5% prevalence in newly diagnosed pediatric cases (3).Different social determinants for TB were found in high percentage of cases in this study ie overcrowding at home found in 88.9% cases and poor ventilation found in 62.2% cases.The risk of TB increases 3.2 times in malnutrition,3.1 times in diabetes,2.9 times in alcohol use(>40g/day) and 2 times in active smoking(4)—many of these risk factors found in high percentages in TB cases of this study(64.8% malnourished,42% smokers,44% alcoholics).It was also noted in this study that several risk factors were prevalent in high percentages in retreatment groups(ie Cat II patients) e.g. not put on DOTS,irregular drug intake and incomplete treatment earlier.Also 82%

of those who were addicted to alcohol and/or smoking earlier, continued to be addicted until onset of repeat Tuberculosis.

The social stigma of tuberculosis is much less studied than those of other diseases such as AIDS or mental problems.TB-infected individuals perceive themselves to be at risk for a number of stigma-related social and economic consequences.Because the most common result of TB stigma is isolation from other members of the community,TB infection can substantially impact economic opportunities. For example, the stigmatization of TB in Ghana has led to the prohibition of TB-infected individuals from selling goods in public markets and attending community events(10).Similarly,fear of TB stigma can lead infected individuals to hide their TB status from their families(11). TB stigma also results in a sense of shame or guilt, leading to self-isolation(7,12).In this study though all patients disclosed their disease
status to family members,27.5% & 36.3% did not disclose to close friends and neighbours respectively.

Social discrimination results from stigma associated with this disease.In one study,the majority of the community members expressed fear of contagion by PATBs(13).In that study PATBs reported more exclusion from their friends than from their families(13).Being consistent with the above findings, 44% the study population experienced discrimination, mostly from neighbours (29.4%).

TB-HIV co-infection is a big threat today.In India around 5.6% of incident TB patients are HIV positive (as compared to 13% globally)(1,3)but in this study only 2.7% of TB patients were found HIV positive.Small size of the study population and majority being new cases(67.5%) are the probable causes for this difference.

Conclusion: The above study reflects that social determinants, social stigma and discrimination are still strongly present among the TB patients. Along with improved diagnostic and treatment facilities in RNTCP, Government of India should ensure definite action plan to eliminate these social evils which are deeply rooted in the communities to make TB control in India a reality.

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Abbreviations Used:

DOTS:Directly Observed Treatment Short-Course

UHC:Urban Health Centre

MDR-TB: MultiDrug Resistant TB

XDR-TB: Extensively Drug Resistant TB

AIIH&PH:All India Institute Of Hygiene And Public Health

PCI:Per Capita Income

ATD:Anti Tubercular Drug

Cat I/II:Category I/II

BMI:Body Mass Index

RNTCP:Revised National Tuberculosis Program

PATB:People affected with Tuberculosis