Research Article

Tuberculosis in relation to Socio-economic conditions of Rawalpindi District

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Abstract

The study pertaining to tuberculosis in relation to socio-economic conditions of Rawalpindi district was conducted. One hundred tuberculosis patients with diversified socioeconomic conditions were randomly taken for the study. The results of the study revealed that tuberculosis was more common in males, age group of 25-45 years. The disease was more dominant in married and uneducated people. Mostly poor people with large family size were victim of disease. The tuberculosis disease was closely associated with nature of job and family history of disease but still lot is to be done in this regard. The results of study are elucidated in the text and conclusions are inferred there in.

INTRODUCTION

Tuberculosis is major public health challenge as twenty millions peoples in the world are affected by this disease. Tuberculosis (TB) is main cause of death specifically in under developed countries of the world. Accordingly to WHO report pertaining to global tuberculosis 1.6 million people died in 2012 worldwide. The tuberculosis occurred as a rule rather than exception in the entire world, but most affected were countries of Africa with hot climate that accounts for 85% tuberculosis incidence of the world. Pakistan revealed 5th among most TB burden countries in the world alongside the fourth highest burden of Drug Resistant TB globally. In an estimated population of around 180 million with annual incidence of TB being 231/100,000, Pakistan produces about 420,000 new cases annually. Pakistan alone accounts for 44 % of tuberculosis burden in eastern mediterrarian region comprising of 22 countries.

Tuberculosis is caused by mycobacterium tuberculosis. The tuberculosis patient has symptoms of cough more than three weeks, weight loss, low grade fever which is more in the evening, blood strain sputum, tiredness, chest pain, anemia and dullness. This is more common in man than women and mostly occurs in age group of 15- 59 years. Tuberculosis is more common in poor people, as they are exposed to unhygienic living environments, unbalanced diet and malnutrition. Other factors responsible for tuberculosis are smoking and taking of alcohol and unawareness about disease. Family history of tuberculosis was also main cause of tuberculosis occurrence. Tuberculosis patients are not able to perform their duties efficiently and fetch low income and as such their economic conditions are further deteriorated. An untreated tuberlosis patient infects 10-15 people in a year. The prevention of tuberculosis is imperative; otherwise it may pose threat to human health as every second a new tuberculosis infection occurred in the world.

The proper diagnosis of tuberculosis is essential for optimal treatment thereafter. The diagnosis is usually delayed and later on treatment is not completed, which are main impediments in control of disease. The diagnosis at late stage evoke problem to human health, as it is easy to control tuberculosis at early stage than at late resistant stage. The fresh air of hill station duly supplemented with balanced diet is conducive for tuberculosis cure.

Herman Brehmer, scientist was patient of tuberculosis spent same time at hill station and recovered his health. Contrary to this Jinnah, founder of Pakistan went to ziarat hill station, but could not get rid of disease as tuberculosis was at advanced stage. The women conceal the disease because of marriage problems, while men conceal the disease

because of job constraints. The common diagnostic tests for tuberculosis are chest x-ray, TB Serology, PCR and Sputum microscopy.

The directly observed treatment short courses (DOTS) were developed for tuberculosis on global level. The components of DOTS were commitment of government and all concerned, appropriate diagnosis by sputum microscopy, treatment with standard short courses, supply of quality anti – TB drugs and record system pertaining to registered patients and program performance. In 1993 world Health Organization declared tuberculosis a global emergency and emphasized the adoption of DOTS program. All 22 high burden TB countries had introduced DOTS since 2000. In these countries in 2009 treatment success rate was 87 % and mortality rate reduced 35% at global level. The DOTS will be implemented in 180 countries of the world by 2033. In 2010 WHO realized that DOTS program was slow and Stop TB strategy was initiated to make the world almost free of tuberculosis by 2015 in line compatibles to million development goals.

As regard Pakistan first tuberculosis survey was conducted in 1962 as a result of collaboration of WHO, ministry of Health and UNICEF. The TB centers were established in District Headquarter hospitals. In 1993 WHO declared TB a global emergency and government of Pakistan adopted DOTS strategy in 1994. In 1995 ministry of health decided to set up five DOTS pilot sites. In 1996 National TB control program was started. National TB program is responsible for providing guidelines, policies, coordination's, monitoring, evaluation and research pertaining to tuberculosis. At present provinces are responsible for TB control, with the task of case detection, case management, monitoring and supervision. In Punjab province Punjab TB control program, cure TB to stop TB, TB research and development program, provincial TB control program are functioning.

Tuberculosis may be reduced substantially by inculcating awareness about tuberculosis disease among masses. The awareness may be carried out by basic Health unit (BHU) rural health unit's electronic media, village town social committees and other concerned. The village committee may encourage TB patient to visit BHU/ Hospitals, assist in TB diagnosis, motivate the patient to take medicine regularly and suggest measures to eliminate TB.

The tuberculosis drugs were discovered by Waksman in 1944. Later on drugs like streptomycin, rifampicin and P2A were developed. Later on anti- TB drugs like amino glycosides, quinolones and macrolides were also used to control tuberculosis. Still a more effective TB vaccine is needed to decrease TB incidence.

As per stop TB strategy, Pakistan ought to be TB free country by 2015, but still lot is to be done in this regard. As incidence of tuberculosis may not be avoided because of integrated socio-economic problems like poverty, malnutrition, unbalanced diet, illiteracy, unhygienic overcrowded houses specifically in cities, smoking and unhealthy working environments. More than half the population in Pakistan is subjected to ever increasing adverse poverty environments. The peoples specifically living in rural areas have not adequate awareness about tuberculosis diseases and not able to afford cost of medicines. They are hesitant to diagnostic test; do not take prescribed medicines regularly. The investigation pertaining to incidence of tuberculosis in relation to socio- economic condition of Rawalpindi district is imperative to ascertain the status of tuberculosis disease and devise ways and means to combat the disease effectively. Hence study will be conducted with the objectives.

OBJECTIVES

1.   To determine the incidence of tuberculosis in Rawalpindi district.
2.   To establish the relationship between tuberculosis and socio-economic conditions of peoples of Rawalpindi district.
3.   To suggest measures to eliminate tuberculosis in Rawalpindi district.

HYPOTHESIS

The hypothesis tested were
H0. Tuberculosis is not function of socio-economic conditions of people.
H1. Tuberculosis is function of socio-economic conditions of people.

METHODOLOGY

The study pertaining to socio-economic conditions of Rawalpindi district was conducted during 2013-14. Rawalpindi district comprised of Rawalpindi, Taxila, Gujar khan, Murree, Kahuta and Kallar syedan tehsils. A random sample of 100 tuberculosis patients was taken from the patients brought to TB center Rawalpindi. After tuberculosis suffering the patients themselves prefer treatment at TB center Rawalpindi or referred by basic health units, rural health units and

Hospital in the district to TB center Rawalpindi. The tuberculosis in these patients was diagnosed by chest X-ray and sputum microscopy.

The patients taken for study were informed about the objectives of study and confidentiality of investigations conducted. The patients were coded and supplied with comprehensive questionnaire duly translated in Urdu national language, so that patients can easily understand and respond to the questionnaire. The questionnaire comprised of information, gender, age, marital status, education, income, family size, job nature, family history and awareness about the disease and use of medicines. The data pertaining to tuberculosis disease was collected, summarized, tabulated and subjected to statistical analysis by employing special package of social scientist (SPSS) version. The results are presented in following text and inferences were drawn accordingly.

RESULTS AND DISCUSSION

The data per to gender distribution of tuberculosis patient in Rawalpindi district is present in Table 1A. The male and female number of patients affected by TB was 58 and 42%, respectively. The results of study revealed that males were affected more by tuberculosis than females. The males were subjected to unhealthy working environments. Moreover, smoking, a valid cause of TB was mostly prevalent in male gender. The male patients conceal TB; otherwise they face difficulty to acquire a job. In advent of TB, the job efficiency is also decreased with less wages, that further add to the poverty that already exist with patient. The female conceal disease because of marriage constraints. These findings are in line to early investigation. The data in Table 1B indicate that tuberculosis was most common in age group of 35-45 years, followed by 25-35 years that revealed working class was affected mostly by TB that lowered the efficiency of production population and consequently deteriorate the economy of people in study area. Same statement was valid for other parts of the country. The data of material status of TB patient is given in Table 1C. The data in table indicate that married TB patients were 58% and unmarried TB patients were only 15% . The married patients were almost four times that of unmarried patients. The randwa (wife death) were 12 %, widows were 7 % and remaining 8 5 were divorced. The early marriage with early child and too many children may be vital cause of TB occurrence. This deem appropriate that TB diagnostic test may be carried out prior to marriage. If the test is TB positive, then philosophy of TB treatment first and marriage afterward may be adopted earnestly.

The data pertaining to education level in relation to tuberculosis is presented in Table 2A. The 39% TB patient were uneducated, 25 % primary 17% middle and 135 were matric. The graduate students were only six percent. This may be inferred from data in table that as the education level increased the incidence of TB decreased accordingly. This may be attributed to the fact that education inculcates awareness among people about TB disease. Further educated people opt to live in healthy environments that reduce the chances of TB incidence. The health education may be regular feature at education institutions to attain awareness about TB disease. The data pertaining to income in relation to tuberculosis is presented in table 2-B. almost ¼ patient had income less than 10 thousands, while ½ patients had income less than 20 thousands. The data in the table showed that as the income increased, sequentially the incidence of TB decreased. This may be inferred that TB was more prevalent in poor people. The poverty and TB disease were interrelated phenomenon and poverty alleviation is must to combat TB and vice versa. The people of more income were in a position to take balance diet that was prerequisite to cure from TB disease. The data of family size in relation to tuberculosis is given in Table 2C. the data indicate that minimum TB patients encountered in smallest family of 1-3 members contrary to this highest TB patients were recorded in largest family size of more than 9 family members. The large family living in overcrowded house serves as nursery for spread of disease.

The data of nature of job in relation to tuberculosis is presented in Table 3A. The jobless people were most susceptible to disease. Among the working people, labourers were most affected, followed by businessman and office workers. The unhealthy working environment to which laborer were exposed was quite conducive for spread of TB disease and such environments may be avoided. These results were in conformity to early findings. The data of family history in Table 3B demonstrate that 625 patients were from families that already encountered TB disease. This aspect may be kept in view in combating TB disease. The data in Table 3C revealed that 70% patients had information about TB disease, while substantial number of patients 305 had little information about symptoms test and treatment of disease. Sixty % patients were aware of TB centers in the area. The awareness among remaining 40% ought to be created by the lady health visitors positioned at basic health units/ rural health units. Almost 2/3 patients had information about TB through media. As regard transmission of TB disease, 60% patients were aware of it, almost ½ patients considered that TB disease was curable, while 20% patient considered that TB was not curable disease at all. The belief that TB was not curable disease needs to be dispensed with appropriately. The early diagnosis and early treatment make the disease curable, while delayed diagnosis, irregular intake of medicines and non completion of medical cycle render the TB as resistant and incurable disease. In patients under study, above cited aspects were commonly observed. These aspects ought to be taken into account to eliminate TB in true perspectives. The DOTS program in

district may be made more effective through lady health workers to make it TB free tehsil.

Table 1. Gender, Age and Marital Status in relation to Tuberculosis

A- Gender Group in relation to Tuberculosis

Gender	Tuberculosis patients		
	Number	Percent	Cumulative percent
Male	58	58	58
Female	42	42	100

B- Age Group in relation to Tuberculosis

Age Group Years	Tuberculosis Patients		
	Number	Percent	Cumulative percent
< 15	2	2	2
15-25	18	18	20
25-35	27	27	47
35-45	39	39	86
> 45	14	14	100

C- Marital status in relation to Tuberculosis

Marital Status	Tuberculosis Patients		
	Number	Percent	Cumulative percent
Unmarried	15	15	15
Married	58	58	73
Divorce	8	8	81
Randwa	12	12	93
Widow	7	7	100

Table 2. Education, Income and Family size in relation to Tuberculosis

A. Education level in relation to Tuberculosis

Education Level	Tuberculosis Patient		
	Number	Percent	Cumulative Percent
Un Educated	39	39	39
Primary	25	25	64
Middle	17	17	81
Matric	13	13	94
Graduate	6	6	100

B. Income in relation to Tuberculosis

Income Rupees/ M Thousands	TUBERCULOSIS PATIENT		
	Number	Percent	Cumulative Percent
< Ten	24	24	24
Ten- Twenty	27	27	51
Twenty- Thirty	21	21	72
Thirty- Fourty	17	17	89
>Fourty	11	11	100

C. Family size in relation to Tuberculosis

Family size(numbers)	TUBERCULOSIS PATIENT		
	Number	Percent	Cumulative Percent
1-3	9	9	9
4-6	23	23	32
7-9	31	31	63
>9	37	37	100

Table 3. Nature of job, Family history and disease awareness in relation to Tuberculosis

A. Nature of job in relation to Tuberculosis

Nature of job	Tuberculosis Patient		
	Number	Percent	Cumulative Percent
Office	15	15	15
Business	21	21	36
Labour	23	23	59
Other jobs	7	7	66
Jobless	34	34	100

B.   Family history in relation to Tuberculosis

Family history TB Occurrence	Tuberculosis Patient		
	Number	Percent	Cumulative Percent
Negative	38	38	38
Positive	62	62	100

C.   Disease Awareness

Awareness	Tuberculosis patient			
	Yes	No	Do not know	Total
About disease	70	30	-	100
TB center	60	15	25	100
Thorough media	76	17	7	100
TB transmission	60	12	28	100
TB in curable	50	20	30	100

CONCLUSION

The results of study conducted led to the conclusions that early diagnosis, proper treatment, balanced diet and regular intake of medicines is essential to get rid of disease among masses. Above all, awareness of tuberculosis in people is pivotal point to combat the disease. By so doing, Pakistan may be made tuberculosis free country in line compatible to world health organization millennium development goals.

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