

Prevalence of Depression Among Tuberculosis Patients

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ABSTRACT

Objectives: To find out frequency of depression among Tuberculosis (TB) patients, to study the causes of depression in them and its effect on treatment and prognosis of T.B. **Study Design:** Cross-Sectional Study. **Study Area:** Department of Chest Medicine District Head Quarters and Red Crescent T.B Hospital, Faisalabad. **Duration of Study:** March – May 2009. **Study Population:** TB patients admitted in Department of Chest Medicine DHQ & Red Crescent T.B Hospital, Faisalabad. **Sample Size:** Sample size was 60 TB patients. **Sampling Technique:** Convenience sampling technique. **Data Collection Tool:** Beck's Depression Inventory-II(BDI-II in Urdu) semi-structured questionnaire was used for data collection for all TB patients who were able to understand it. Diagnosis was made as per Diagnostic and Statistical Manual of Mental Disorders, Fourth edition (DSM-IV). **Results:** Depression was present in about 80% of the hospitalized TB patient.

It was more common in males about 86%, while in the females it was about 71%. According to age, young and elderly patients were found to be more affected. Majority of the TB patients had moderate depression, while some had severe and mild depression. Main causes of depression among the male TB patients 24.7% were due to altered social relationship and among female TB patients 23.33% were due to TB stigma.

Conclusion: It is concluded from this study that 80% patients were suffering from depression. The frequency of depression was found to be 86% among males; while 71% of the female patients were found to be depressed. Main causes of depression among the male TB patients were altered social relationship and among female patients TB stigma. Depression had adverse effect on drug compliance and TB treatment.

Key Words: Tuberculosis, Depression, Mycobacterium tuberculosis.

INTRODUCTION

Tuberculosis (TB) is a major global public health problem mostly in developing and under developed countries. Globally it is responsible for more than three million deaths each year and one of the leading causes of mortality world wide¹. The world health organization (WHO) reported that one third of the world population that is approximately 2 billion people, is infected with Mycobacterium tuberculosis and there are about 8-10 million new active cases each year.² Tuberculosis is particularly common among individuals with mood disorders e.g., anxiety and depression. Because of the frequent comorbidity of TB and mood disorders; it is important for primary health care physicians, who treat TB patients to be mindful of the clinical manifestations of depression. Because of the highly infective nature of TB, psychiatrists should be aware of diagnostic

and treatment considerations of this disease.² There were 8.8 million new cases of TB in 2005, the highest rates being in Africa (28% of all TB cases) and half of all new cases in six Asian countries namely Bangladesh, China, India, Indonesia, Pakistan and the Philippines.³ Awareness about depression and its role in the outcome of chronic disorders like rheumatoid arthritis and COPD has increased over the years.⁴ Diabetes like TB is a chronic illness and research in to diabetes has indicated that psychological, particularly depression and the patient's perceptions about their illness predict poor glycaemic control.⁵ The efficacy of enhanced psychological treatments on improved diabetes self-care has been demonstrated.⁶ In a United Kingdom based sample of TB patients higher rates of depression and anxiety were observed in the

poorly compliant TB patients, as were more negative health beliefs. Depression and lack of perceived control were independently associated with poor adherence. Thus treating psychological problems in patients with tuberculosis may substantially improve treatment adherence, although further research is needed⁷. Estimates suggest that 5.7 million of Pakistan's current population of 170 million suffer from TB, with 260, 000 new cases occurring each year.⁷

MATERIAL AND METHODS

It was a cross- sectional study carried out in TB patients admitted in Department of Chest Medicine DHQ & Red Crescent T.B Hospital, Faisalabad from 1st March to 31st May 2009. The study was conducted on 60 diagnosed pulmonary TB patients selected by convenient sampling technique. A semi-structured questionnaire prepared in English and translated into Urdu was the tool for data collection. Beck's Depression Inventory – II comprising of 30 items (BDI-II adapted in Urdu) was used for data collection for all patients who were able to understand it. The questionnaires were filled in by the data collectors by interviewing the TB patients. Diagnosis was made as per Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV). Grading of depression was done according to severity levels: Nil (less than 9 depression scale), mild (depression scale 10-15), moderate (16-24 depression scale) and severe (25 & above). The Illness Perception Questionnaire (IPQ) was used to record patients' personal beliefs about Tuberculosis. Culturally validated translation of IPQ into Urdu was developed to facilitate the patients to understand the questions. Informed consent written or verbal was taken from all the TB patients under study. The Institutional Research Committee approved the study.

STATISTICAL ANALYSIS

The data collected was entered, cleaned and analyzed by using Statistical Analysis Software (SAS) Version-9 program. Student T test was applied to test the correlation among different variables. The multiple logistic regression model was used to determine the predictive strength of depression with nominal variables (sex economic problems, hospital environment, altered, social,

relationship, T.B stigma and long duration of treatment). The overall model was tested by using Chi-square test to compare proportion difference and check the association of different characteristics. Confidence level was 95% and P-value <0.05 was considered as significant.

Results

Figure-1
Showing depression among T.B patients

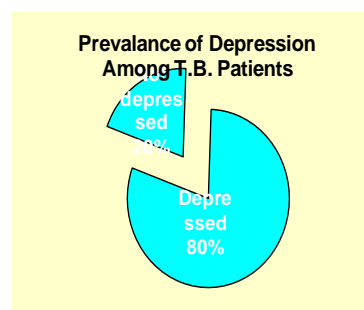


Table 1:
Prevalence of depression among TB patients according to gender

	Patients not Depressed	Patients Found Depressed	Total	p-value
Male	5(13.9%)	31(86.1%)	36(100%)	0.132
Female	7(29.2%)	17(70.8%)	24(100%)	
Total	12(20%)	48(80%)	60(100%)	

Table 2:
Degree of depression among depressed TB patients according to gender

	*1 MILD	*2 MODERATE	*3 SEVERE	Total	p-value
Male	3(9.7%)	16(51.6%)	12(38.7%)	31(100%)	0.198
Female	5(29.4%)	6(35.3%)	6(35.3%)	17(100%)	
Total	8(16.7%)	22(45.8%)	18(37.5%)	48(100%)	

Table 3:**Causes of depression among Male & Female T.B. patients admitted in Hospitals**

Causes of depression	Hospital Environment	Economic Problems	Altered Social Relationships	T.B. Stigma	Long Duration of Treatment	Total
No. of Males	5(5.88%)	20(23.52%)	21(24.7%)	20(23.52%)	19(22.35%)	85(100%)
No. of Females	10(16.66%)	15(25%)	10(16.66%)	14(23.33%)	11(18.33%)	60(100%)
Total	15(10.34%)	35(24.15%)	31(21.38%)	34(23.45%)	30(20.68%)	145(100%)
p-value	0.002	0.08	0.54	0.19	0.82	

Table 4:**Prevalence of depression among TB patients according to age**

Age Groups Of Patients	11-25 yrs	26-40 yrs	41-55 yrs	Above 56 yrs	Total	p-value
Males	10(32.3%)	12(38.7%)	5(16.1%)	4(12.9%)	31(100%)	0.831
Females	6(35.3%)	8(47.1%)	2(11.8%)	1(5.9%)	17(100%)	
Total	16(33.3%)	20(41.7%)	7(14.6%)	5(10.4%)	48(100%)	

Out of the 60 TB patients observed in the study, 36 were males and 24 were females. According to Fig.1, a total of 48 (80%) patients were found to be depressed; while 12 (20%) were not depressed. According to table.1, depression in TB patients regarding gender, among 36 male TB patients, 31 (86%) were found to be depressed ; while among 24 female TB patients, 17(70.83%) were found to be depressed The difference in proportions of Depression for male and female is not statistically significant as p-value is 0.132. According to table.2, showing degree of depression, out of 31 depressed male patients 3(9.67%) were mildly depressed, 12(38.70%) were severely and 16(51.61%) were moderately depressed. Out of the 17 depressed female patients 5(29.41%) were mildly depressed 6(35.29%) were moderately and 6(35.29%) were severely depressed. Among the total of 48 (100%) depressed TB patients 8 (16.7%) were mildly depressed, 22(45.8%) were moderately and 18(37.5%) were severely depressed. There is no association in gender and degree of depression as p-value is 0.198. According to table.3, showing the causes of depression, according to total responses 145 (100%) , hospital environment accounted for depression among 10.34% of the patients, economic problems 24.15%, altered social relations 21.37%,

social stigma due to T.B 23.44% and long duration of the treatment caused depression among 20.68% of the patients. The difference in proportions of Depression for male and female regarding hospital environment is statistically significant as p-value is 0.002. All other responses and results in table.3 are not statistically significant as p-values are more than 0.05, which have no significance in different proportions of depression for male and female. According to table.4 showing the depression among T.B patients regarding age distribution. We divided patients into 4 groups. Out of the total 31 male depressed patients in the first group from 11-25 years were 10(32.25%) patients, in second group from 26-40 years 12(38.70%) patients, 3rd group 41-55 years 5(16.12%) and in the 4th group having age 56 years and above 4 (12.9%) depressed patients. Out of the 17 depressed female patients in the first group from 11-25 years were 6 (35.29%), 2nd group from 26 -40 years 8 (47.05%), 3rd group from 41-55 years 2 (11.76%) patients and in the 4th group above the age of 56 years was only 1 (5.8%) depressed female patient. The prevalence of depression in different age groups has no association with gender as p-value is 0.831.

DISCUSSION

In this study, our objectives were to examine the frequency and degree of depression in patients suffering from tuberculosis admitted in DHQ and Red Crescent TB hospital Faisalabad, Pakistan. A study was done by Lau DT and Nau DP⁸ in which poor treatment adherence in medical conditions had resulted in worse clinical outcomes, but also subsequent hospitalization and increased health care costs. There has been a growing interest in psychiatric co-morbidity in physically ill patients and understanding of its consequences particularly poor adherence⁸. In the present study 80% TB patients were found to be suffering from depression also, among whom 45.8% were moderately and 37.5% were severely depressed leading to long stay in hospital and high costs of medicine, so the results of this study are consistent with the above study. In a study conducted by Mirza and others in Karachi in 2004⁹, prevalence of depression and anxiety was about (47%) in TB patients. Mean prevalence of anxiety and depression in Pakistan found to be around 34% (range 29.66% for women and 10.33% for men) in community based population. However, the results of our study relating to depression in TB patients are more i.e 80% and also higher in males than females. This may be due to low socio-economic status, the long duration of treatment, stigmatization, fear and threat of high risk that the air-borne TB disease could spread to families and communities. Higher prevalence of depression in males could be attributed to more vulnerability to TB and depression due to their mobile life style, exposure to predisposing factors like smoking, alcohol intake and drug abuse. They have to bear more economic burden and stress of excessive responsibilities of their families. They have to face more stigmatization due to more exposure in the community. A study conducted at DHQ hospital Faisalabad in Dermatology Department.¹⁰ Showed that 51.97% patients were found to have psychiatric co-morbidity depression and it was more in females 85% as compared to males 15%. Another study was done in a Tertiary Care Hospital of Pakistan¹¹ and it showed that in diagnosed cancer patients 52% had symptoms of Anxiety and depression or both. In the current study depression among TB patients is 80%, it may be due to the long duration of treatment, stigmatization and threat of high risk to infect other

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family members of the TB patients who were in contact with him. A study conducted at hemodialysis units of Shalimar and Shaikh Zayed Hospital Lahore in 2006¹² showed that the patients getting regular hemodialysis for more than three months, majority of them 56.1% were moderately to severely depressed. Major causes of renal failure in these patients were chronic diseases like diabetes, hypertension and chronic glomerulonephritis. An other study was conducted by Dogar I A and others¹³ to assess the co-morbidity of anxiety and depression in the patients suffering from various hepatic diseases in liver center of DHQ hospital, Faisalabad and 88.2% patients were found to have anxiety and depression. In the present study 83% patients were found to have moderate to severe depression, so the results of current study are nearly consistent with the above studies. The important and interesting fact is that all the three studies conducted in Faisalabad about prevalence of depression in different chronic diseases, depression was found to be present in more than 80% patients.

CONCLUSION

It is concluded that 80% patients suffering from TB were depressed. The prevalence of depression was found to be more among males (86%) than the female TB patients having (71%) depression. The degree of depression was related to various factors like age, sex, socioeconomic status, duration of treatment of the disease, altered social relationship of the society and TB stigmatization. Depression leads to hopelessness and decreased resistance to infections, so it adversely affects the patient's compliance to TB treatment. It is important to diagnose and treat depression in time to get the desired results of TB treatment all over the world and especially in under developing countries like Pakistan.

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