Frequency of Depression in Tuberculosis Patients and its Association with Various Sociodemographic Factors

AMNA TARIQ[1], SOBIA ARSHAD[2], MEHREEN EJAZ[3]

ABSTRACT

Aim: To determine the frequency of depression in tuberculosis (TB) patients and to evaluate its association with various sociodemographic factors.

Methods: After taking written informed consent, 151 TB patients were enrolled. All the patients suffering from tuberculosis either in outpatient department or inpatient department were included. Patients who did not give consent and patients who were undergoing treatment for depression prior to the onset of TB were excluded. Those with other coexisting physical illness were also excluded in order to avoid the confounding influence of these factors on psychological well being. Patients' demographics and other variables were filled in a predesigned proforma by the attending himself. Depression was defined as a HAM-D score of ≥ 8 and severity of depression was also assessed via Hamilton Rating Scale for Depression (HAM-D). SPSS version 21.0 was used for statistical analysis taking p value <0.05 as statistically significant.

Results: Out of total 151 cases, depression was found in 80 (53.0%) patients. Depression was significantly seen more in patients between 46-60 years of age (p-value of ,0.001), patients with poor marital relationships (p-value of 0.002) and those belonging to a lower socioeconomic status (p-value of 0.003)

Conclusion: Prevalence of depression in TB patients in Pakistan is quite high. In order to effectively control tuberculosis, it is crucial to address the problem of comorbid depression.

Keywords: HAM-D score, Tuberculosis, Comorbid depression

INTRODUCTION

Tuberculosis is the second most common infectious disease worldwide and a major public health concern especially in our part of the world. Almost one third of the world population i.e., approximately two billions people are infected with Mycobacterium tuberculosis. It is responsible for more than three million deaths each year[1]. Pakistan ranks 5th in the world countries with highest prevalence of tuberculosis and it accounts for 61% of the TB burden in the WHO Eastern Mediterranean Region[2].

Tuberculosis is a chronic infectious disease in which both mental and physical health deteriorates. A recent systematic review by Kastien-Hilka et al[3] showed that TB is associated with poor health related quality of life (HRQOL). Depression is a common comorbid psychiatric condition in patients with tuberculosis[4]. In fact it a comorbid in most of the chronic illnesses. Depression is associated with poor compliance, increased morbidity and mortality in

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[1]WMO Surgery, DHQ Sheikhupura
[2]WMO Medical Emergency, DHQ Hospital, Sheikhupura
[3]WMO Paeds, Children Complex, DHQ Hospital, Sheikhupura
Correspondence to Dr. Amna Tariq Email: aamnah__fairy@hotmail.com Cell: 03444102669

tuberculosis patients[5]. The potential for depression to cause poor compliance is not only worrisome in terms of individual patient outcomes but also poses a threat to public health through the potential for the development of multidrug resistance[6]. Possible mechanisms for association between TB and depression include psycho socioeconomic stressors such as stigmatization and effect of antituberculous drugs like isoniazid. Some further go on to suggest that the neglected self-care and compromised immunity seen in depressive patients is responsible for contracting TB[7].

Early diagnosis and treatment of depression in TB patients can help in improving treatment adherence, minimizing stigma, preventing relapse due to lack of compliance and decreasing chances of developing multidrug resistance. A recent study by Ahmed et al[8] reported a prevalence of 49.4% of depression in TB patients. Another local study by Sulehri et al[9] reported the prevalence to be as high as 80%.This was further high than already reported mean prevalence of depression in Pakistani population i.e. 34%[10]. Most vulnerable sociodemographic factors associated with depression in TB patients included female gender, elderly, widow, poor socioeconomic status and those with family history of depression.8 Keeping in view the

huge burden of tuberculosis in Pakistan, it is crucial to address the problem of depression amongst TB patient to ensure success of TB control programmes.

The aim of our study was to determine the frequency and severity of depression in tuberculosis patients and finding association of various sociodemographic factors with depression in TB patients.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted from 1st July 2017 to 31st December 2017 at DHQ Hospital Sheikhupura. The sample size was calculated using Open Epi calculator with the statistical assumptions of 8% alpha error and 95% confidence interval taking frequency of depression amongst TB patients to be 49.4%[8] and came out to be 151 patients for this study. Non probability consecutive sampling technique was employed to enroll the study subjects. Informed written consent was taken in each case. The Institutional Research Committee approved the study. All the patients suffering from tuberculosis either in outpatient department or inpatient department were included. Patients who did not give consent and patients who were undergoing treatment for depression prior to the onset of TB were excluded. Those with other coexisting physical illness were also excluded in order to avoid the confounding influence of these factors on psychological well being. Patients' demographics and other variables were filled in a predesigned proforma by the attending himself. Depression was defined as a HAM-D score of≥ 8 and severity of depression was also assessed via Hamilton Rating Scale for Depression (HAM-D)[11]. The severity of depression was calculated by predetermined cutoff scores. Due to low literacy of patients questions were read for patients and the level of severity was asked for each question and marked respectively. SPSS version 21.0 was used for statistical analysis. Results were calculated as frequencies (%), means and standard deviations. Chi square test was used to find correlation between severity of depression and sociodemographic factors. Confidence interval was 95% and p-value <0.05 was considered significant.

RESULTS

Out of the 151 TB patients observed in the study, 90 were males and 61 were females. Depression was present in 79(53%) of the TB patients. Out of 53% depressed patients 37.5% were mildly depressed, 35.0% were moderately depressed 27.5% were

found to be severely depressed. There was no patient found having profound depression (Table 1).

Table 1: Frequency and severity of depression among TB patients

Diagnosis	n	HAM-D cutoff scores
No depression	71(47.0)	1-7
Mild depression	30(19.9)	8-13
Moderate depression	28(18.5)	14-18
Severe depression	22(14.6)	19-22
Profound depression	0(0)	23 above
Total	151(100%)	

Table 2: Prevalence of depression among TB patients according to gender

	Patients not depressed	Patients depressed	Total
Male	40 (44.4%)	50 (55.6%)	90(100%)
Female	31 (50.8%)	30 (49.2%)	61 (100%)
Total	71 (47.0%)	80 (53.0%)	151(100%)

P value 0.44

Table 3: Degree of depression among depressed TB patients according to gender

Degree of depression	n
Male 50(55.6%)	
Mild	14 (15.6%)
Moderate	22 (24.4%)
Severe	14 (15.6%)
Female 30(49.2%)	
Mild	16 (26.2%)
Moderate	6(9.8%)
Severe	8(13.2%)

P value 0.04

According to table 2, depression in TB patients regarding gender, among 90 male TB patients, 50(55.6%) were found to be depressed ; while among 61 female TB patients, 30(49.2%) were found to be depressed with the difference in proportions of depression being statistically insignificant as p-value came out to be 0.44. Table 3 shows a significant association between gender and degree of depression (p-value=0.04). Relationship between various other sociodemographics variables and comorbid depression was also evaluated. Depression was significantly seen more in patients between 46-60 years of age (p-value of ,0.001), patients with poor marital relationships (p-value of 0.002) and those belonging to a lower socioeconomic status (p-value of 0.003) (Table 4). Although depression was

more frequent amongst patients with long duration of illness (10-12 months) and positive family history of depression, no significant association was found. No significant difference was observed in frequency of depression between outpatients and inpatients diagnosed with TB (p-value of 0.31).

DISCUSSION

Depression is a common comorbid condition associated with tuberculosis. It has been dubbed as the silent driver of global tuberculosis epidemic[6] as it deeply affects patient's compliance. Our study aimed to determine the frequency and severity of depression amongst TB patients and to check whether there was any significant association between any of the sociodemographic variables and comorbid depression.

We used HAM-D score to evaluate for the presence and severity of depression. Our study showed that 53% of patients with TB were having comorbid depression. This was consistent with the results of Ahmed et al[8], Rizvi et al[12] and Hussain et al[13] who also used HAM-D score and reported a prevalence of 49.4%, 56% and 46.3% respectively. However, it was in contrast to findings of Sulehri et al[9] who reported a prevalence of 80%. The difference can be attributed to the relatively smaller sample size and different instrument used to diagnose depression. Our study also reported significant association between gender and degree of depression with males suffering more frequently from depression. This could be attributed to their increased vulnerability to TB and depression due to their mobile lifestyle and burden of socioeconomic responsibilities on them. Our study showed that depression was significantly more prevalent in the elderly, lower socioeconomic class and divorced/separated or widowed individuals. This was partly consistent with the findings of Ahmed et al[8] who also demonstrated a significant association between comorbid depression and the elderly age group (p-value of 0.042). However, no significant association was found between those having poor marital relationships or socioeconomic status and depression.

Depression is commonly associated with many chronic ailments. A study done in cancer patients in Pakistan reported prevalence of depression to be 52%[14]. Another study conducted amongst dialysis patients at Lahore showed that about 56.1% were moderately to severely depressed[15]. These prevalence rates are quite close to our study which reported a prevalence rate of 53% amongst patients with Tuberculosis; another common chronic illness. These rates are also high compared to the

prevalence of depression in general population of Pakistan. Treating depression is crucial to the success of National TB control program and demands an effective strategy to tackle this problem.

CONCLUSION

Prevalence of depression in TB patients in Pakistan is quite high. According to our study, important sociodemographic factors responsible for depression amongst TB patients include poor socioeconomic status, poor marital relationships and elderly age group. In order to effectively control tuberculosis, it is crucial to address the problem of comorbid depression.

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