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Pattern of psychiatric illness among tuberculosis Patients an analysis in a tertiary care hospital of Bangladesh

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Abstract
The aim of this study was to evaluate the incidence and pattern of psychiatric illness among tuberculosis patients. Patients diagnosed as Tuberculosis coming for treatment in DOTs corner were included for the study. Each patient underwent a detailed psychiatric evaluation by a consultant psychiatrist once they were medically stable. Details included socio-demographic data, psychiatric diagnosis and treatment outcome.
Among the total 350 tuberculosis patients, total 108 patients (30.9%) were diagnosed with psychiatric problems. Most of them are less than 40 years of age (70.4%), male (71.3%), from urban area (69.4%) with no previous psychiatric illness (97.2%). Depression (n=43, 39.8%) and Anxiety (n=33, 30.6%) were the commonest psychiatric illness diagnosed. Fear of disease outcome was the commonest precipitating factor found (65.7%). 65.7% not expects a full recovery. 59.2% fears of death as a disease outcome. After the psychiatric treatment, 93.5% improved clinically.
Detecting the level of psychiatric illness among tuberculosis patients at early stage will improve continuation and adherence to treatment. A referral system to psychiatrists by physicians needs to develop to screen the mental disorder symptoms to treat these co morbidities.

Keywords: Tuberculosis, Psychiatric illness, Bangladesh

1. Introduction
Tuberculosis (TB) is a chronic infectious multi systemic disease caused by mycobacterium tuberculosis and is one of the leading causes of mortality worldwide [1]. The World Health Organization (WHO) has estimated that 2 billion people, almost a third of the world's population have latent tuberculosis [2]. Every year about eight million people develop this disease, and some three million die of it, over 95% of these from developing countries. In 2005 the highest rates per capital were from Africa (28% of all TB cases), and half of all new cases were from five Asian countries, namely Bangladesh, China, India, Indonesia and Pakistan [3, 4]. Tuberculosis mortality is an important indicator of the success of TB control. A higher rate of mortality and morbidity was seen among patients with baseline psychiatric, because they defaulted from treatment [5]. There is a high prevalence of psychiatric illness in TB patients, but primary care physicians and specialists do not screen this association although anxiety and depression occur frequently in persons with these cases.
It has also been shown in most of the National and International studies that most of these patients have a history of mental illness; the commonest diagnosis being depression which is usually followed by personality disorder alone or co morbid with other psychiatric illnesses [6].
Keeping these facts and figures in mind, we intended to conduct a study aiming to analyze the patterns and determinants of psychiatric illnesses in the patients diagnosed as tuberculosis in a tertiary care hospital.

Materials and Methods
This cross-sectional descriptive study based on the interview of the patients diagnosed as tuberculosis comes for treatment in DOTs (Directly Observed Therapy) corner. The aim of this study was to evaluate the pattern of psychiatric illness in tuberculosis patients at early stage and subsequently how it can improve continuation and adherence to treatment.

The study population included all those patients who were diagnosed as tuberculosis and being managed for and brought for psychiatric evaluation during the period of eight months (July 2014- February 2015). Each patient underwent a detailed psychiatric evaluation by a consultant psychiatrist. Psychiatric diagnoses were considered as per ICD-10 criteria and patients were managed with pharmacological / non-pharmacological measures. The factors related to suicide (intentionality and lethality) were assessed during the interview and mental status examination of the patients. Besides the questionnaire, level of depression was rated by BDI, and anxiety was rated by STAI.

The Beck Depression Inventory (BDI) is questionnaire for measure the intensity, severity, and depth of depression. It is composed of 21 questions. Clinically significant level of depression was defined by score of BDI: 0-4 Normal, 5-7 mild, 8-15 moderate, >16 severe Depression.

STAI, or State-Trait Anxiety Inventory, is an instrument that quantifies adult anxiety. It is questionnaire used to simplify the separation between state anxiety and trait anxiety, feelings of anxiety and depression. We used S-Anxiety scale STAI ST and the T-Anxiety scale STAI TR, each having 20 items. These tests are answered on the basis of a 1-4 scale, with the focused areas including: worry, tension, apprehension, and nervousness. Value 40-60 interpreted like moderate and more than 60 sever symptoms. Data was tabulated and statistical analysis was performed using software SPSS-16.

Results

In our study 108 patients were diagnosed with psychiatric illness among 350 tuberculosis patients making the prevalence of psychiatric illness 30.9%. (Figure 1)

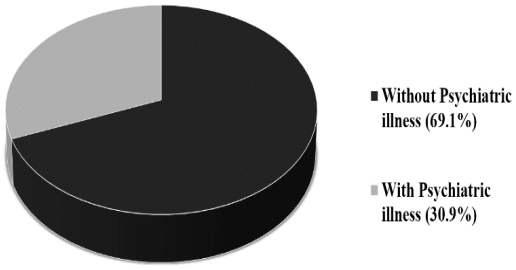


Fig 1: Percentage of Psychiatric illness among Tuberculosis patients.

On studying socio-demographic factors among 108 tuberculosis patients we found 70.4 % patients were aged less than 40 years. 71.3% affected individual were male. 69.4% were from urban area. Only 2.8% had previously diagnosed psychiatric illness. (Table 1)

Table 1: Distribution of Socio-demographic factors in Tuberculosis patients:

Age Group	Number (n)	Percentage %
<40 years	76	70.4
>40 years	32	29.6
Sex group		
Male	77	71.3
Female	31	28.7
Residence		
Rural	33	30.1
Urban	75	69.4
Past psychiatric illness		
Yes	3	2.8
No	105	97.2

Various types of Psychiatric illness were found in patients who were diagnosed as tuberculosis. Of the total 108 cases seven types of psychiatric illness were found. Of them Depressive illness was the commonest (39.8%, n=43). Others are anxiety (n=33), somatoform (n=11), psychotic spectrum disorder (n=9), personality disorder (n=7) and substance use disorder (n=3). 2 cases remained undiagnosed. (Figure 2)

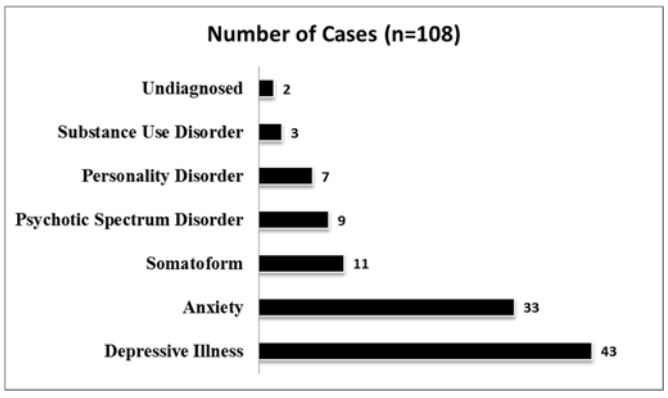


Fig 2: Number and Types of Psychiatric illness among tuberculosis patients.

We also found that Depression (39.8 %, n= 43) and Anxiety (30.6%, n=33) were the most common psychiatric findings (70.4%) among tuberculosis patients. 30 cases (27.8 %) diagnosed as other psychiatric illness. 2 cases remain undiagnosed. (Figure 4)

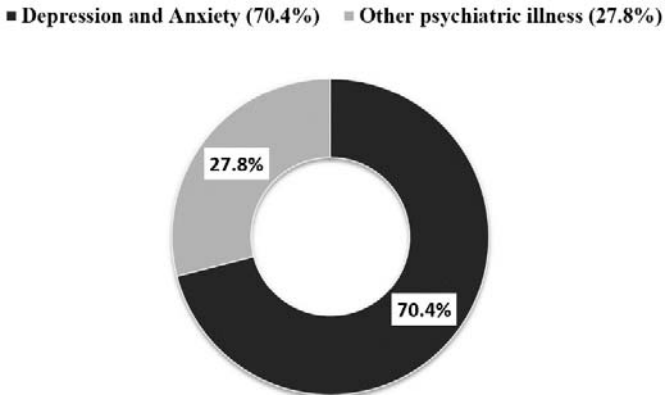
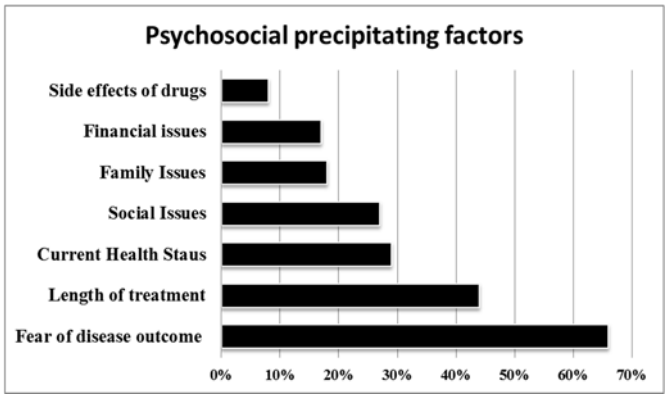


Fig 3: Common Psychiatric findings in TB patients.

There were multiple psychosocial precipitating factors among tuberculosis patients.

Fear of disease outcome (65.7%, n=71) and length of treatment (44.4%, n=48) were the most common precipitating factors. Current Health status (29.1%), social issues (27.3%), family issues (18.7%), financial issues (17.5%), side effects of drugs (8.1%) also identified as precipitating factors. (Figure 4)



*Each person allowed to answer multiple factor.

Fig 4: Psychosocial precipitating factors among tuberculosis patients

We also studied patient's mental perspective about illness. 56.5 % knows correctly why the disease occurs. 11.1 % did not know the causation of the disease. More than half of the patients (59.2%) fears of death as disease outcome. 39.8 % were worried about their families and their children's future (37.9%). 65.7% don't expects to cure the disease fully. (Table 2)

Table 2: Patients perspective about their illness.

Causation		
Germs	61	56.5
Poor diet	16	14.8
Smoking	10	9.3
Alcohol	9	8.3
Don't know	12	11.1
Fear about illness *		
Death	63	59.2
Will infect family	43	39.8
Worry children's future	41	37.9
Disease will worsen	30	27.8
Others	10	9.3
Treatment expectations		
Will not fully cured	71	65.7
Will be fully cured	24	22.2
Lead to disability	8	7.4
Don't know	5	4.6

*Allowed to give multiple answers.

Our study also reveals distribution of treatment related factors. Pharmacologic treatment were given with Benzodiazepines (36.1%, n=39), antidepressants (28.7%, n=31), antipsychotics (8.3%, n=9). Non pharmacologic treatment (counseling) were given to 21.3 %. After the appropriate psychiatric management, outcome was excellent with 93.5% improved or recovered clinically. (Table 3)

Table 3: Distribution of Treatment related factors:

Treatment given (n=108)	**Number**	**Percentage %**
Benzodiazepines	39	36.1
Antidepressants	31	28.7
Antipsychotics	9	8.3
Combined	6	5.6
Counseling	23	21.3
Outcome		
Improved/ Recovered	101	93.5
Treatment failure	5	4.6
Not returned	4	3.7
Expired	1	0.9

Discussion

Tuberculosis is a common disease in developing countries causing high mortality and morbidity [1]. Due to its long treatment process and variable outcomes psychiatric illness is common in tuberculosis patients [2, 3]. Psychiatric complications (anxiety, depression, psychosis) can greatly impact patient quality of life of patients with tuberculosis specially MDR- TB therapy [6, 8]. In our study we have shown that Depression and anxiety are very high in patients with tuberculosis (Depression 42 %, Anxiety 29%). Depression was positively correlated with anxiety (p=0.001) for patient with tuberculosis.

Baba and his colleagues showed 7% prevalence of depression in Nigeria [5]. A study conducted in India showed that the prevalence of depression and anxiety was 19% for recently diagnosed patients with TB, 22% for defaulted TB patients and 26% for patients with Multidrug resistant [10]. A higher prevalence of psychiatric disorders was found in tuberculosis group (31.1%) compared with 5% in healthy control group in Nigerian study [5]. The difference of prevalence rates can be explained possibly by sensitivity of screening instruments used, other psychological factors associated with hospital admission, educational level, other co morbidities and complications of tuberculosis. In United Kingdom a higher rate of depression and anxiety were in noncompliant TB patients and treating psychological disorders may substantially improve treatment adherence [4]. The tuberculosis patients with an unfavorable social status with stressful economic factors (financial worry, unemployment, homeless, poverty) and stressful personal factors (divorce or alone, multiple treatment failures or abandon) also carries high risk for psychiatric illness [7].

Raised depressive prevalence (46%) and anxiety scores (47%) were associated with an increase in the number of symptoms reported, more serious perceived consequences and less control over the illness [6]. Persistent cough may be an additional control of depressive patient [3].

The patients' perspectives of their illness showed that a significant proportion of the subjects did not believe in the infectious nature of the disease and feared death. These finding are similar to the studies reported from other developing nations [10], despite the health education. A detailed elicitation of the perspectives held by each patient, tackling these beliefs at the individual's level rather than health education in groups, and in a culturally sensitive way taking into account the local perceptions of the illness is indicated. Different studies also showed psychiatric illness as an important factor for poor medication compliance in tuberculosis [10, 11].

Conclusion

Evaluation and management of mental disorders from Tuberculosis Patients (significantly higher compared to general population) may increase treatment compliance and reduce relapse. This can ameliorate the prognosis and quality of life for patients with this chronic disease. Primary care doctors and consultants need to develop systematic strategies to screen the mental disorders symptoms in tuberculosis patients and must ask aide from psychology or psychiatric doctor for treat these co morbidities.

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