

Neuropsychiatric diseases among chronic low back pain patients

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Abstract

Introduction: The incidence of chronic low back pain (LBP) is very high in Bangladesh. There is a high prevalence of psychiatric diseases among chronic low back pain patients. But primary care physicians and specialists do not screen this association. The aims of this study were to evaluate the incidence and pattern of psychiatric diseases in chronic low back pain patients.

Materials and methods: A prospective cross-sectional hospital-based study of 135 chronic low back pain patients using simple, direct, standardized questionnaire including history and detailed psychiatric evaluation by a consultant psychiatrist from January to December 2014.

Results: A total 69 chronic low back pain patients (51.1%) were diagnosed with psychiatric problems. Predominant group were female (65.9%), above 40 years of age (60.7%). Depression (44.9 %) and anxiety (31.9%) were the major psychiatric illness diagnosed (76.8%). Only 17.4 % patients expects complete cure. Fear of disease outcome was the commonest precipitating factor found (66.6%). With the adjuvant psychiatric management, 81.1% showed improvement clinically.

Conclusion: Detecting the level of psychiatric illness among chronic low back pain patients at early stage will improve the treatment outcome. A referral system to psychiatrists by physicians needs to develop to screen the mental disorder symptoms to treat the problem.

Keywords: Chronic low back pain, Psychiatric illness, Bangladesh

Introduction

Chronic pains are among today's common problems, and the most common are low back pain (LBP), headaches, cancer pains and arthritis. The chronic pain may lead to various psychological problems. After the headaches, LBP is the second cause of referring to the clinical centers¹. Existing estimates indicate between 12 to 45 percent of adults and between 60-80 percent of all people will suffer from LBP once in their lifetime². Also, this problem causes 12

percent of recuperative off-gettings, as well as the 25 percent of all compensatory expenses caused by inabilities at work³. According to the existing estimates, 0.5 percent of working people suffering from LBP resign if they have LBP for more than six months⁴. A higher rate of morbidity was seen among LBP patients with baseline psychiatric illness, because they defaulted from treatment⁵. So, there is a high prevalence of psychiatric illness in chronic LBP 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 illnesses⁵.

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 of chronic LBP in a tertiary care hospital.

Materials and methods

This cross-sectional descriptive study based on the interview of the patients presented with the symptom of low back pain comes for treatment in medicine outpatient department of Chittagong Medical College Hospital in Bangladesh. The aim of this study was to evaluate the pattern of psychiatric illness in low back pain patients at early stage and subsequently how it can improve the treatment outcome.

The study population included all those patients who presented with low back pain in medicine outpatient department for more than 3 months and brought for psychiatric evaluation during the period of one year (January 2014- December 2014). 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 anxiety was rated by STAI and depression was rated by BDI.

State-Trait Anxiety Inventory (STAI) 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 severe symptoms.

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.

Data was tabulated and statistical analysis was performed using software SPSS-16.

Results

Among the 135 patients presented as chronic low back pain 69 patients (51.1%) were found with different patterns of psychiatric illness. Four different major causes of low back pain diagnosed with psychiatric illness in our study. Of them most of the cases were due to mechanical (n=96, 71.1%). Others common causes are traumatic (n=18, 13.3%), inflammatory (n= 11, 8.1%), neoplastic (n=7, 5.2%). (**Figure 1**)

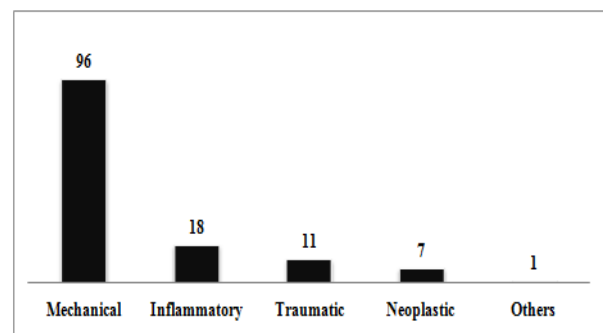


Fig. 1: Causes of low back pain with psychiatric illness.

On studying socio-demographic factors among chronic low back pain patients we

found 60.7 % patients were aged greater than 40 years (n=82). 65.9 % affected individual were female. 61.5 % were from urban area. 31.5% were sedentary worker. 56.3 % had BMI greater than 24. At the time of interview smoker (34.1%) and alcoholic (6.6%) patients also found. 28.1 % had co morbid illness predominantly with hypertension (14.1%) and diabetes (11.1%). Only 4 patients (3%) had previous psychiatric illness. (Table 1)

Table 1: Distribution of Socio-demographic factors in low back pain patients.

Socio demographic factors	Number (n)	Percentage %
Age Group:		
<40 years	53	39.3
>40 years	82	60.7
Gender:		
Male	46	34.1
Female	89	65.9
Residence:		
Urban	83	61.5
Rural	52	38.5
BMI:		
<24	59	43.7
24-30	65	48.1
>31	11	8.2
Working Status:		
Sedentary worker	52	38.5
Non sedentary worker	83	61.5
Substance use:		
Smoker	46	34.1
Alcoholic	9	6.6
Nothing	78	57.8
Others	2	1.5
Co morbid disorders:		
None	97	71.9
Hypertension	19	14.1
Diabetes	15	11.1
Ischemic Heart disease	3	2.2
Primary Bone disease	1	0.7
Past psychiatric illness:		
Yes	4	3
No	131	97

We asked about the mental state of the patients and we found only 8.1 % patients did not worry about their chronic back pain. 98 patients (72.6 %) were very worried about their outcome of chronic disease. (Figure 2)

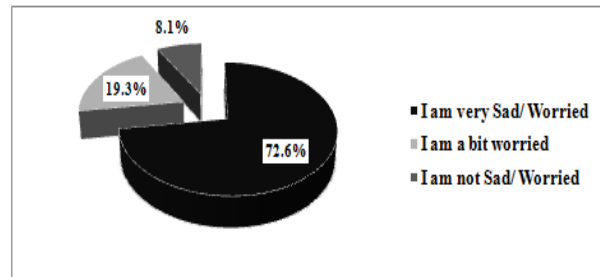


Fig. 2: Mental state in chronic low back pain.

In our study 69 patients were diagnosed with psychiatric illness among 135 chronic low back pain patients making the prevalence of psychiatric illness in chronic low back pain 51.1 %. (Figure 3)

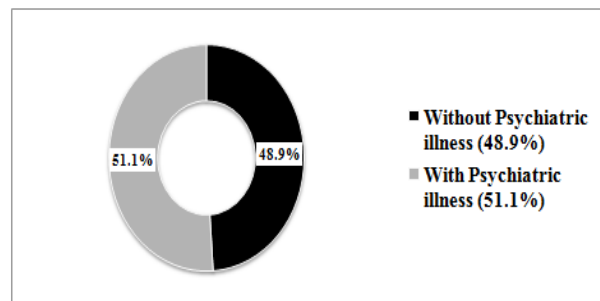


Fig. 3: Percentage of Psychiatric illness in low back pain patients.

Various types of Psychiatric illness were found in patients who had chronic low back pain. Of the total 69 cases seven types of psychiatric illness were found. Of them Depressive illness was the commonest (44.9 %, n=31). Others are anxiety (n=22), somatoform (n=7), psychotic spectrum disorder (n=5), and substance use disorder (n=2) and personality disorder (n=1). 1 case remained undiagnosed. (Figure 4)

Table 2: Psychosocial precipitating factors among low back pain patients.

Precipitating factors *	Number	Percentage %
Fear of disease outcome	67	49.6
Hamper of Regular activity	51	37.8
Fear of loosing occupation	30	22.2
Decreased work performance	28	20.7
Financial issue	19	14.1
Side effects of drugs	12	8.9
Family issue	6	2.2

*Each person allowed to answer multiple factors.

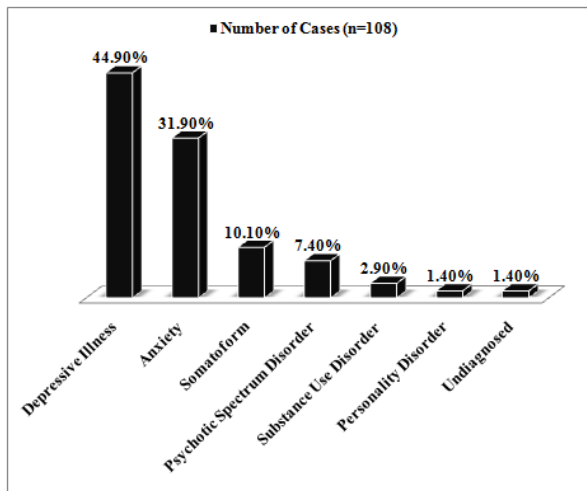


Fig. 4: Number and Types of Psychiatric illness among low back pain patients.

We also found that Depression (44.9 %, n=31) and Anxiety (31.9%, n=22) were the most common psychiatric findings (76.8%) among chronic LBP patients. Only 23.2 % diagnosed as other psychiatric illness. (Figure 5)

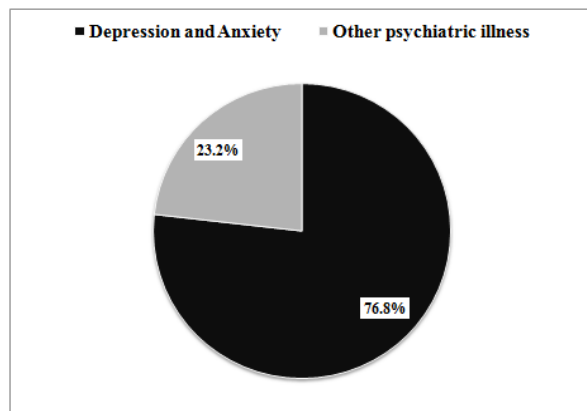


Fig. 5: Common Psychiatric findings in low back pain patients.

There were multiple psychosocial precipitating factors among chronic LBP patients.

Fear of disease outcome (49.6%) and hamper of regular activity (37.8%) were the most common precipitating factors. Fear of loss of occupation, decreased work performance, financial issues, side effects of drugs and family issues were also identified as precipitating factors. (Table 2)

We also studied patient’s mental perspective about illness. Only 30.4 % patients knew about their diagnosis. 69.6% did not know the diagnosis. 31.9 % thinks the disease is due to lack of calcium. 56.5 % believes the disease will not cure again. 46.4% believes the disease will not cure again. Only 17.4% expects to cure the disease fully. (Table 3)

Table 3: Patient’s perspective about their illness.

Belief about illness	Number	Percentage %
Diagnosis of the disease:		
Know	21	30.4
Don’t know	48	69.6
Causation:		
Lack of Calcium	22	31.9
Poor diet	14	20.3
Stressful work	11	15.9
Poor posture	9	13.1
Trauma	4	5.8
Smoking	2	2.9
Don’t know	7	10.1
Fear about illness :		
Disease will worsen	39	56.5
Disease will not cure	24	34.8
Death	6	8.7
Treatment expectations:		
Will be fully cured	12	17.4
Not fully cured	32	46.4
Lead to disability	18	26.1
Don’t know	7	10.1

Our study also reveals distribution of treatment related factors. Pharmacologic treatment were given with antidepressants (44.9%, n=31), Benzodiazepines (27.5%, n=19), antipsychotics (4.3%, n=3). Non pharmacologic treatment (counseling) were given to 20.3 %. Outcome was excellent with 81.2% improved or recovered clinically. (Table 4)

Table 4: Distribution of Treatment related factors.

Treatment given (n=69)	Number	Percentage %
Antidepressants	31	44.9 %
Benzodiazepines	19	27.5 %
Antipsychotics	3	4.3 %
Combined	2	2.9 %
Counseling	14	20.3 %
Outcome		
Improved/Recovered	56	81.2 %
Not improved	8	11.6 %
Not returned	4	5.8 %
Expired	1	1.4 %

Discussion

Chronic low back pain (LBP) is a common disease in developing countries causing high morbidity². Due to its long disease process and variable outcomes psychiatric illness is common in LBP patients^{3, 4}. Psychiatric complications (anxiety, depression, psychosis) can greatly impact patient quality of life of patients with chronic LBP⁵. In our study we have shown that depression and anxiety are very high in patients with chronic LBP (Depression 44.9 %, Anxiety 31.9%). Depression was positively correlated with anxiety (p=0.001) for patient with chronic LBP.

The studies show that the psychosocial characteristics can be an important factor in the painful and inability periods, and psychological treatments are effective in pain reduction⁶. Also, emotional problems accompanying LBP lead the pain to become a chronic one; of course the pain itself causes the psychological symptoms.

According to the study done by Jhonston *et al.* (2003), 90.7 percent of the acute LBP patients will suffer from chronic disability, the chance of the patients with one of the psychiatric disorders for chronic inabilities is significantly more than the others⁷. Although in another study, pain behavior did not correlate with anxiety or depression but correlated with measures of disability and pain intensity⁸. Using diagnostic methods, the present studies have shown psychological and psychosocial factors are more important than medical exploration and distinct physical phenomena in the incidence of LBP. In a study on retail material handlers, dissatisfaction was shown as a major factor in the incidence of LBP⁹. The findings of another study conclude work hardening and a contented ethos of the manual labors under study have moderate association between the prevalence and etiology of LBP¹⁰. Today, researches, considering behavioral, educational and psychological factors role in the functional rehabilitation programs for LBP chronic patients, have combined the treatment with relaxation, ergonomic, aerobics and physiotherapy. Another study's results suggest the presence of non-organic signs should alert the physical therapist of the need for additional psychological tests and should not necessarily be considered an indicator of malingering¹¹. The prospective studies indicated that psychological variables were related to the onset of pain, and to acute, sub acute, and chronic pain, but there is no relation between the acute and chronic pains with pain's dimensions¹². Many studies also have shown association between psychological problems including depression, anxiety and cognitive dysfunctional with chronic pain patients in LBP^{13, 14}. Some of them reported the effects of psychological factors in increasing the inability level in LBP patients and some other studies have mentioned these factors as effective ones in shifting the pain to a chronic one^{14, 15}. In these studies, LBP

patients benefited from combination therapies including physical and psychological therapy.

Conclusion

Evaluation and management of mental disorders from chronic low back pain patients (significantly higher compared to general population) may increase treatment outcome 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 chronic low back pain patients and must ask aide from psychology or psychiatric doctor for treat these co morbidities.

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