

## ANXIETY AND DEPRESSION IN PATIENTS SUFFERING FROM CHRONIC LOW BACKACHE

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### ABSTRACT

**Objective:** To determine the frequency of anxiety and depression in patients with chronic low backache and to document other co-morbidities among these patients presenting at rheumatology clinic of a tertiary care hospital in Islamabad.

**Study Design:** Cross sectional study.

**Place and Duration of Study:** Study was conducted at Pakistan Institute of Medical Sciences from July 2012 to April 2013.

**Methodology:** A total of 170 chronic low backache patients were administered urdu translated Zung Self-Rating Depression Scale and Zung Self-Rating Anxiety Scales. Scoring was done on Likert-type scale of 1-4 (based on these replies: "a little of the time," "some of the time," "good part of the time," "most of the time") with overall assessment by cumulative score ranging from 20 to 80, where 20-44 was normal range, 45-59 mildly depressed/anxious, 60-69 moderately depressed / anxious and 70 and above severely depressed / anxious.

**Results:** Out of 170 patients, 157 patients above 18 years of age with male to female ratio 2:3 completed the study. Among study sample 72.2% had mild depression, 21.6% had mild anxiety, 32% had mixed mild anxiety and depression, 0.8% had severe depression, 1.6% had severe anxiety while 2.4% suffered from severe mixed symptoms. Overall, 125 (79.6%) patients were suffering from mild to severe form of depression and anxiety both alone or mixed. Obesity was present in 34 (21.66%) of patients with chronic backache and out of these 29 (85.3%) had psychological co-morbidity.

**Conclusion:** Two thirds of the chronic backache patients reporting at rheumatology clinic of a tertiary care hospital were suffering from mild to severe degree of depression and anxiety. This worrying situation calls for thorough systematic evaluation of all chronic backache patients arriving at rheumatology clinic for mood disorders and psychological ailment.

**Keywords:** Anxiety, Chronic Low Backache, Depression.

### INTRODUCTION

Chronic low-back pain is usually described as a period of pain lasting more than 7-12 weeks. It is a major health and economic problem that affects populations around the world<sup>1</sup>. Chronic low-back pain has high prevalence with occurrence of at least one episode during lifetime in 70% to 80% of world's adult population<sup>2</sup>. It is considered to be one of the major causes of medical expense, work absenteeism, and disability<sup>3</sup>. An association between chronic pain with depression and anxiety has long been shown. It is now known that anxiety, depression

and pain share many biological pathways and various neurotransmitters<sup>4</sup>. Systemic reviews reveal that around 42% of patients with primary depression develop chronic backache, and around 58% of patients with chronic backache develop depression<sup>4</sup>. Pessimistic thoughts can activate certain areas in the brain which cause the patient to give more attention towards the pain leading to fall in threshold of the pain perception. It is reported that there is reciprocal influence of pain and depression on one another. A change in severity of one would result in change in subsequent severity of symptoms of the other. Therefore, it has been suggested that management of both ailments must be taken into account especially when one of the conditions fails to respond optimally. In addition, this psychological co-morbidity of chronic pain can

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also result in advancement of both disease and disability<sup>5,6</sup>. It is now recommended to systematically evaluate chronic pain patients for depression and anxiety for better treatment outcome<sup>6-8</sup>.

The exact prevalence of anxiety and depression in general Pakistani population is not known. In a study of 111 rheumatologic patients presenting at a tertiary care hospital of Karachi, 65.8% were found to have depression and anxiety<sup>9</sup>. This figure is higher than other studies from Karachi where prevalence of depression and anxiety was found to be between 7 to 50 %<sup>10,11</sup>. The burden of the disease is increasing day by day which may be because the co-psychiatric ailments of chronic pain remain under diagnosed. Therefore, it is important for clinicians to evaluate their chronic rheumatologic pain patients for presence of psychological co-morbidities at their set up<sup>6,8</sup>.

The current study was planned to determine the frequency of depression and anxiety among patients with low backache lasting for more than 3 months. Documentation of the presence of other co-morbidities and socioeconomic status of the patients was also done.

## **MATERIAL AND METHODS**

This cross sectional study was performed at the department of Rheumatology, Pakistan Institute of Medical Sciences (PIMS) Islamabad, from July 2012 to April 2013. The study protocol was approved by the medical ethics committee of PIMS. Patients more than 18 years of age, with history of low backache, mechanical or inflammatory, for more than 12 weeks, were included in the study after taking informed consent. Patients taking antidepressants, anxiolytics, antipsychotics, severely ill, bed ridden patients of back pain, pregnant and lactating females, and those with other cause of depression, for example recent death of close relative, were not included in the study. Patients who were not able to understand English, Urdu or Punjabi were also excluded. Total 170 patients were included in the study through non-

probability purposive sampling. Basic demographic data including age, weight, height, gender, marital and employment status were recorded. Patients with body mass index (BMI) of 30 or more were considered as obese.

Self administered Zung self-rating depression scale and Zung self-rating anxiety scale were employed in this study. These are commonly used and internationally recognized scales designed by William W. K. Zung, a psychiatrist from Duke University to determine levels of depression and anxiety<sup>12</sup>. They were translated into local language. Both comprise of 20 questions which determine depression and anxiety level.

Questions are scored on a Likert-type scale of 1-4 (based on these replies: "a little of the time," "some of the time," "good part of the time," "most of the time"). Cumulative score was done for overall assessment. A scores range of 20 to 80. At the end the scores fell into four ranges:

20-44	Normal range
45-59	Mildly depressed/anxious
60-69	Moderately depressed/anxious
>70	Severely depressed/anxious

Urdu translated version of Zung anxiety and depression self rating questionnaires were given to the patients, the interviewer asked questions from illiterate patients maintaining their confidentiality at all stages. Data had been analyzed using SPSS version 17. Frequency and percentage for qualitative variables were calculated to describe the results.

## **RESULTS**

Out of 170 patients, 157 completed the proformas. Maximum number of patients were of age < 44 years. Male to female ratio was 1:2. The cause of low backache was concluded to be mechanical in 127 (80.89%) patients and inflammatory in 30 (19.11%) patients after history, physical examination and routine investigations, which were done for every

backache patient reporting at rheumatology clinic of PIMS. (table-1)

Out of 157 chronic backache patients, 125 (79.62%) were suffering from mild to severe form of depression and anxiety. Frequency and severity of anxiety and depression alone and mixed symptoms in patients with chronic low backache are shown in table-2. Depression was observed in 23.13% married subjects while unmarried individuals were anxious. Among house wives 20.12 % were depressed, 16.47% anxious and 47.23% had combination of both. Similarly, 22.12% of patient doing private job were depressed, 9.12% were anxious and 22.24% had mixed symptoms. Out of 12 students among study population, 5 (41.70%) were anxious.

Thirty four (21.6%) patients suffering from chronic low backache were also obese. Among 34 obese individuals 29 (85.30%) had these psychological disorders as well (Figure-1)

Other common co-morbidities were hypertension (10.2%) and rheumatic conditions (Rheumatoid arthritis and osteoarthritis) (12.1%). Out of 16 hypertensive patients 5 (31.25%) had anxiety, 2 (12.53%) had depression and 5 (31.25%) had mixed features. While among 19 patients having other rheumatic conditions as a co-morbidity, 8 (42.10%) had mixed anxiety and depression, 2 (10.5%) were depressed, and 6 (31.6%) were anxious.

## DISCUSSION

The purpose of current study was to determine the frequency and levels of mood disorder in chronic low backache patients presenting at rheumatology outpatient department of a tertiary care hospital. Since there is a reinforcing mutual relationship between psychological co-morbidity and chronic pain, therefore it must be evaluated for optimal treatment outcome<sup>13</sup>.

Self administered Zung self-rating depression scale and Zung self-rating anxiety scale used in this study are recognized valid tools for assessment of depression and anxiety<sup>14</sup>. These

**Table-1: Demographic details and percentages of patients (n=157).**

Age groups	No. of cases	Percentage
18-44 years	97	61.78%
45-64 years	51	32.48%
>65 years	9	5.73%
<b>Gender</b>		
Male	53	33.76%
Females	104	66.24%
<b>Marital status</b>		
Married	129	82.16%
Unmarried	28	17.83%
<b>Employment status</b>		
Employed	53	33.76%
Unemployed	104	66.24%
<b>Type of chronic low backache</b>		
Inflammatory	30	19.11%
Mechanical	127	80.89%

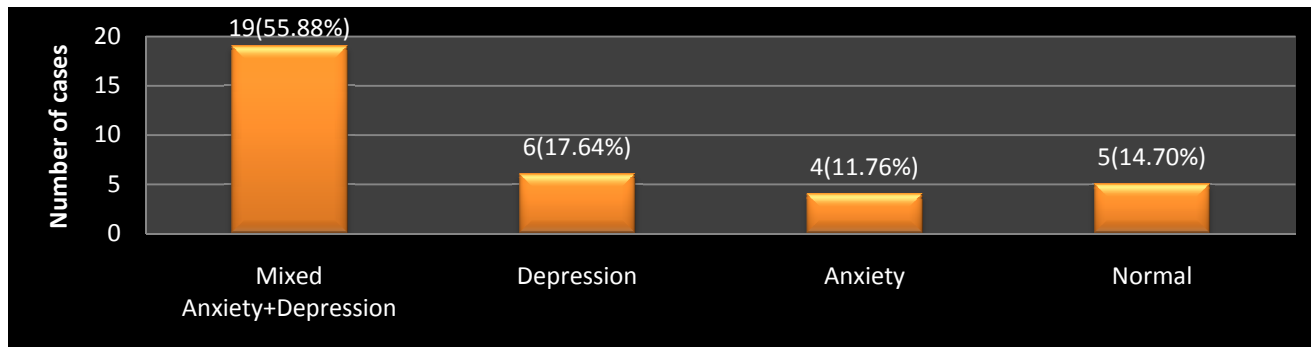
**Table-2: Depression and anxiety in patients with chronic low backache (n=125).**

Zung anxiety/ depression scale	Frequency of depression	Frequency of anxiety	Frequency of mixed disorder
Mild	34 (21.27%)	27 (21.6%)	40 (32%)
Moderate	3 (2.4%)	1 (0.8%)	14 (11.2%)
Severe	1 (0.8%)	2 (1.6%)	3 (2.4%)

scales have proven specificity for sub threshold depression and anxiety<sup>15</sup>. The results of present study on these scales show that more than two thirds of study population suffered from depression and anxiety (from mild to severe) as a co-morbid state. This figure is similar to a study conducted at another tertiary care hospital in Karachi; however, it is higher than figures shown in studies conducted in West<sup>8,16</sup>. Higher prevalence of psychological co-morbidity in Pakistani population could be attributed to large number of stressors to which population is exposed. We pointed out some of these in our study e.g. employment status of the patient and co-morbid conditions from which they were suffering. Of the co-morbid conditions, obesity was found to be the most commonly showed in

21.66% of patients. It was also noted that 85.29% of these obese patients had psychological ailments including anxiety, depression or a

of chronic backache patients reporting at the rheumatology clinic.



**Figure-1: Percentages of anxiety and/or depression in obese patients (n=34).**

combination of both and this link has been well documented in the literature<sup>17</sup>. On the other hand, it has also been shown in meta analysis that obesity has a causative role in the development of backache<sup>18</sup>. So those patients who have backache and are obese are more at risk of developing depression and/or anxiety.

The high number of study population suffering from depression and anxiety is worrisome. These disorders are often missed in chronic pain patients due to under exploration or consideration that the domain is beyond rheumatology<sup>9</sup>. This finding contributes in supporting a multidisciplinary management plan for chronic pain patients for early detection and follow up of co-morbid psychological ailment using cognitive behavioral therapy, psychiatric services and health education. This may raise the cost of treatment plan however, for early detection of co-morbid psychological conditions general physicians may be involved or trained and only difficult cases may be referred to team of rheumatologists and psychiatrists to cut down on the cost of overall patient care.

Limitation of current study is that it gives data of only one hospital. Although this study did not explored probable relationship between anxiety and depression with other variable like disease activity, or total disease duration. It provides documented evidence to use methods for early detection for psychological assessment

## CONCLUSION

Two thirds of the chronic backache patients reporting at rheumatology clinic of a tertiary care hospital were suffering from mild to severe degree of depression and anxiety. Such a high number of study population with psychiatric comorbidity demands for thorough systematic evaluation of all chronic pain patients arriving at rheumatology clinic for mood disorders and psychological ailment.

## REFERENCES

1. Anderson GB. Epidemiological features of chronic low-back pain. *Lancet* 1999; 354: 581-5. 2.
2. Kent PM, Keating JL. The epidemiology of low back pain in primary care. *Chiropr and Osteopath* 2005; 13:13.
3. Miranda LH, Werner A, Philip PH. A short, intensive cognitive behavioral pain management program reduces health-care use in patients with chronic low back pain. *Eur Spine J*. 2012; 21: 1257-64.
4. Matthew J. Bair, Rebecca L. Robinson, Kurt K. Depression and pain comorbidity. A Literature Review. *Arch Intern Med*. 2003; 163(20):2433-2445
5. Kroenke K, Wu J, Bair MJ, Krebs EE, Damush TM, Tu W et al. Reciprocal relationship between pain and depression: a 12 month longitudinal analysis in primary care. *J Pain* 2011;12:964-73
6. Nicholas H, Raymond W, Ostelo JG, Maurits W, Johan WS. Behavioral treatment for chronic low-back pain. *Cochrane Back Group* 2010 published online.
7. Wells KB, Stewart A, Hays RD, Burnam MA, Rogers W, Daniels M et al. The functioning and well being of depressed patients. *JAMA* 1989; 262:914-9
8. Ohayon MM, Schatzberg AF. Using chronic pain to predict depressive morbidity in the general population. *Arch of Gen Psychiatry* 2003; 60:39-47
9. Abdul W, Kamran H, Abdul Moiz K, Junaid A, Ahmed I M. The burden of anxiety and depression among patients with chronic rheumatological disorders at a tertiary care hospital clinic in Karachi, Pakistan. *J Pak Med Assoc* 2006; 56:243-6
10. Ali BS, Rahbar MH, Naeem S, Tareen AL, Gul A, Samad L et al. Prevalence of factors associated with anxiety and depression among women in a lower middle class semi urban community of Karachi. *J Pak Med Assoc* 2002; 52:513-7

11. Niaz U, Hussain S, Hussain H, Siddiqui SS. A cross sectional study of frequency of psychiatric morbidity in affluent urban population of Karachi. *Pak J Med Sci* 2004; 20(4): 337-44.
  12. Sylvia Z. Psychometric properties of Zung self rating anxiety scale for adults with intellectual disabilities. *J Div Phys Disabil* 2008; 20: 573-80.
  13. Yalda T, Ali K, Somayeh E. Investigating the relationship between anxiety and pain catastrophizing in people with chronic low back pain. *AJMPR* 2012; 2:26-9
  14. Thurber S, Snow M, Honts CR. The Zung Self-Rating Depression Scale: convergent validity and diagnostic discrimination. *Assessment*. 2002 Dec;9(4):401-5
  15. Veltri A, Scarpellini P, Piccinni A, Conversano C, Giacomelli C, Bombardieri S et al. Methodological approach to depressive symptoms in fibromyalgia patients. *Clin Exp Rheumatol*. 2012; 30:136-42
  16. Shawn R C, JianLi W. Chronic back pain and major depression in general Canadian population. *Pain* 2004; 107: 54-60
  17. Luppino FS, De Wit LM, Bouvy PF, Stijnen T, Cuijpers P, Penninx BW, et al. Overweight, obesity, and depression: a systematic review and meta-analysis of longitudinal studies. *Arch Gen Psychiatry*. 2010; 67(3):220-9
  18. Shiri R, Karppinen J, Leino-Arjas P, Solovieva S, Viikari-Juntura E. The association between obesity and low back pain: a meta-analysis. *Am J Epidemiol*. 2010; 171(2): 135-54.
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