

## Original Article

# Association of Quality of Life with Depression in Patients with Chronic Low Back Pain

Ameena Amjad,<sup>1</sup> Saba Amjad,<sup>2</sup> Saliha Yousaf,<sup>3</sup> Hafiza Neelam Muneeb,<sup>4</sup> Rameeza Rashid<sup>5</sup>

### Abstract

**Objective:** The objectives of this study were to evaluate prevalence of depression and extent of disability among patients with chronic Low Back Pain and to observe the association between the quality of life and depression in these patients.

**Methodology:** It was a cross-sectional study. A convenient sampling technique was used for data collection. One hundred and seventy eight patients suffering from chronic low back pain were selected from study population. Data was collected using two questionnaires. For assessing depression, Beck's depression scale was used and for measuring Quality of Life, the Oswestry Disability index was used. SPSS 20 was used for data analysis. A p value of <0.05 was considered statistically significant and qualitative variables were presented as frequencies and percentages.

**Results:** Seventy-one percent of the patients belonged to female gender. 53.9 % of the LBP patients had moderate disability while 20.8% had severe disability and 2.2% were belonging to the crippled category as measured on Oswestry inventory. The Beck's depression scale revealed that 43.3% of the patients suffered from mild mood disturbance, 10.7% had borderline clinical depression, 13.5% and 1.1% patients suffered from moderate and severe depression respectively. Cross tabulation was done between the Oswestry inventory and beck's depression scale. A significant association (p value = 0.001) was revealed between quality of life and depression in LBP patients.

**Conclusion:** Majority of the chronic Lower Back Pain patients suffered from moderate levels of disability and mild mood disturbances while a significant association was found between quality of life and depression in these patients highlighting the need for better pain management and follow up to mitigate these negative impacts of chronic lower back pain.

**Keywords:** Depression, Quality of Life, Chronic Low Back Pain

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1. NUR International University
2. University of Lahore
- 3-4. Riphah International University
5. Akhtar Saeed Trust Hospital

### Correspondence:

Dr. Ameena Amjad, Assistant Professor, NUR International University, Department of Physical Therapy. E-mail: ameena.uhs@gmail.com

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### Introduction

Chronic Lower Back Pain (LBP) is defined as pain that continues for 12 weeks or longer, even after an initial injury or underlying cause of acute low back pain has been treated.<sup>1</sup> It is a debilitating ailment which affects the patients quality of living as it impairs his daily routine.<sup>2</sup> The chronic pain medications also

impose an economic burden on the healthcare burden.<sup>3</sup> It has been a challenge for the clinicians to find the exact cause of back pain in majority of the cases which thus leads to insufficient treatment and thus chronicity.<sup>4</sup> This chronicity of pain negatively affects two domains of the patients health which are often ignored on follow up: his mental well being and his extent of disability.<sup>5-6</sup> The threshold of pain and the difficulties in carrying out various activities of daily life are not correlated to the findings on radiographic images of the lower spine.<sup>7</sup> Patients with LBP also tend to suffer from mood variations leading to clinical depression as well.<sup>8</sup> A plausible explanation could be that People suffering from chronic lower back pain avoid doing activities for the fear of aggravating the symptoms and this can easily lead to despair and depression.<sup>9-10</sup> These patients should be followed up and assessed for depressive symptoms and treatment should be initiated early to prevent further aggravation.<sup>11-12</sup> The impairment in life quality and onset of mood alterations have the tendency to get worse with age.<sup>13-15</sup> Various researches have used standardised scales alongwith psychometric analysis for measuring disability and depression in ageing patients with lower back aches.<sup>15-17</sup> The aim of our study was to evaluate the extent of disability and prevalence of depression among chronic low back pain patients and to observe the association between the quality of life and depression in these patients.

**Methodology**

This was a cross-sectional study conducted in various hospitals of Lahore over a period of six months. A convenient sampling technique was used for data collection. Patients with chronic low back pain were selected as a study population. The inclusion criteria were patients from 25-65 years of age with low back pain for more than 3 months. Exclusion criteria were patients with recent injury or trauma, recent surgical operation, any systemic disease and cancer. The

sample size was N=178 (according to the WHO calculator). The data was collected using questionnaires namely Beck’s depression scale and the Oswestry Disability index. Ethical and scientific review committee’s approval was taken before initiating the research. Consent from the patients was taken and they were told about the complete procedure involved in the research program and were made aware of all the risks and benefits. The confidentiality of the patients was maintained.

Data was analysed by SPSS 20 software. Qualitative variables were presented in frequency and percentage.

**Results**

Seventy-one percent of the patients were females and 28.65% of patients were males. Table 1 displays the prevalence of various categories of disability in the LBP patients. The majority (53.9%) of patients

**Table 1:** Prevalence of disability in LBP patients as per Oswestry inventory.

Sr. No	Quality of life category (Oswestry inventory)	Extent of disability	Total patients (n = 178)	Percentage of patients (%)
1.	Minimal disability	0-20%	38	(21.3%)
2.	Moderate disability	21-40 %	96	53.9
3.	Severe disability	41-60%	37	20.8
4.	Crippled	61-80%	4	2.2
5.	Fully disabled	81-100%	3	1.7

**Table 2:** Prevalence of depression among LBP patients using Beck's Depression Inventory

Sr. No	Depression category (Beck's inventory)	Beck's inventory Score category	Total patients (n=178)	Percentage of patients (%)
1.	Normal	1-10	55	30.9
2.	Mild mood distrubrnace	11-16	77	43.3
3.	Borderline clinical depression	17-20	19	10.7
4.	Moderate deression	21-30	24	13.5
5.	Severe depression	31-40	2	1.1
6.	Extreme depression	>40	1	0.6

**Table 3:** Association of quality of life with depression among low back pain patients

Oswestery inventory	Beck's Depression Inventory						Total	P value
	Normal (1-10)	Mild (11-16)	Borderline (17-20)	Moderate (21-30)	Severe (31-40)	Extreme (>40)		
Minimal (0-20%)	16 (9.0%)	17 (9.6%)	4 (2.2%)	1 (.6%)	0 (0%)	0 (.0%)	38 (21.3%)	0.001*
Moderate (21-40%)	32 (18.0%)	45 (25.3%)	6 (3.4%)	13 (7.3%)	0 (0%)	0 (0%)	96 (53.9%)	
Severe (41-60%)	6 (3.4%)	13 (7.3%)	9 (5.1%)	8 (4.5%)	1 (0.6%)	0 (0%)	37 (20.8%)	
Crippled (61-80%)	0 (0%)	1 (0.6%)	0 (0%)	2 (1.1%)	1 (0.6%)	0 (0%)	4 (2.2%)	
Completely (81-100%)	1 (0.6%)	1 (0.6%)	0 (0%)	0 (0%)	0 (0%)	1 (0.6%)	3 (1.7%)	
<b>Total</b>	55 (30.9%)	77 (43.3%)	19 (10.7%)	24 (13.5%)	2 (1.1%)	1 (.6%)	178 (100.0%)	

\*p value <0.05 is considered statistically significant

showed moderate disability. 21.3% showed minimal disability. 20.8% showed severe disability while 2.2% of the patients were crippled.

Table 2 shows the prevalence of various levels of depression amongst chronic LBP patients using the Beck's inventory . 30.9% were normal while the majority of patients (43.3% ) showed mild mood disturbance. 10.7% and 13.5 % patients showed borderline and moderate clinical depression respectively. 1.1% showed severe depression and 0.6% showed extreme depression.

Table 3 shows the association of quality of life with the extent of depression in the patients with chronic LBP. A significant association is found between the level of disability and the extent of depression (p value = 0.001).

**Discussion**

In this study, validated questionnaires were employed to determine the quality of life along with the psychological status of patients with chronic Low back pain LBP. Evidence suggests a 65% incidence of functional disability due to LBP<sup>12</sup>. Contributing fac-

tors include working environment, poor self-efficacy & depression.<sup>13-14</sup> In previous research, a comparison had been done between preoperative chronic LBP patients and healthy individuals in the control group. A greater rate of disability was assessed among preoperative patients as compared to the control. This study also concluded that patients who were suffering from LBP for three months or more had significant functional disability.<sup>9</sup> In a study, women experiencing chronic lower backache were assessed clinically and from questionnaires. Amongst them, twenty-eight per cent of them reported severe pain, more trigger points, signs of fatigue, and reduced functioning. Future risks for disability were higher in the group having low back pain.<sup>18-20</sup> In patients having chronic low back pain, anxiety and depression are the most commonly seen psychiatric illnesses. Previous studies showed that anxiety and depression were two common symptoms found among these patients.<sup>14,17</sup> Similar findings have been found in the current study. The results of this study suggest that patients suffering from low back pain for more than three months place them at high risk of developing

depression and anxiety. The related symptoms of depression & anxiety e.g., poor concentration, insomnia, low mood, lethargy and lack of motivation may have an adverse influence on the treatment of the patient as well as on the recovery process. Previous studies revealed that depression & anxiety are the main factors influencing the quality of life for patients suffering from chronic musculoskeletal pain.<sup>15,20</sup>

Our findings imply the significance of evaluation and management of psychosocial illness in quality of life in patients having low back pain and suggest that these should be part of successive follow-ups. Psychological treatment and support play an important role in these patients for reducing symptoms of anxiety and depression and improving their quality of life. Future research with large sample size is suggested for generalizability.

### Conclusion

Moderate levels of disability and mild mood disturbances were found among the majority patients with chronic low back pain. A strong association was found between quality of life and depression in these patients highlighting the need for better pain management to improve the quality of life of these patients and to monitor their mental health for adverse outcomes.

**Conflict of Interest** *None*

**Funding Disclosure** *None*

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#### Authors Contribution

**AA:** Conceptualization of study

**SA, AA:** Drafting

**AA, SY:** Critical Revision, Final Approval

**HNM, RR:** Data Collection and Analysis

All authors are equally accountable for accuracy, integrity of all aspects of the research work.