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HOW SEVERE IS DEPRESSION IN LOW BACK PAIN PATIENTS

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SUMMARY – The aim of the present study was to determine the prevalence of depression among low back pain (LBP) patients and to investigate the sociodemographic characteristics of patients with LBP and relationship between depression and pain intensity in LBP patients. The study was conducted on 99 patients treated at Clinical Department of Neurology, Split University Hospital Center. There were 36 (36%) men and 63 (64%) women. Some degree of depression was present in 73 (74%) study patients, including all patients with severe LBP. In the group of patients with severe LBP, the rate of moderate, severe and very severe depression was 1.36-fold that recorded in the group of patients with moderate LBP and 2.58-fold that found in the group of patients with mild LBP (χ^2=16.2; p=0.003). The most common symptoms were general physical symptoms 70 (71%), psychic anxiety 69 (70%) and depressed mood 66 (67%). It is concluded that depression was more severe in LBP patients with severe disease compared to patients with mild or moderate LBP.

Key words: *Depression; Low back pain; Psychiatric status rating scales; Hamilton depression scale*

Introduction

Low back pain (LBP) is a common health problem with a prevalence of 60%-90% over one's lifetime and an annual incidence of 5%, although it usually has a benign and self-limiting course. LBP is an increasing medical and economic problem affecting nearly 80% of the general population[1,2]. LBP is the second leading cause of visiting family care doctor after common cold, the leading cause of disability in working population, and has a significant economic impact not only on lost productivity, but also on health care expenditure. LBP is expected to affect most adults at some point during their lifetime[3]. It is a symptom commonly presented to general practitioners, with an increasing number of those visiting hospitals to seek secondary opinion[4]. LBP is a complex condition produced by multiple factors. There is evidence that psychosocial difficulties and psychological factors might be associated with LBP[5]. Despite the recognition that excessive pain complaints are associated with psychological problems, the exact relationship between pain behavior and psychological factors remains unclear. It has been reported that LBP can have a substantial negative impact on the quality of life and that psychological distress is common in patients with LBP[6]. The hypothesis is that subjects exhibiting excessive pain complaints would be more depressed than those who do not exhibit excessive levels of pain complaints. Due to its medical, social, and financial importance, LBP and depression pose an important concern to the medical world[5]. Recent reviews of prognostic factors conclude that psychological and social factors are thought to contribute to the development of chronic LBP. The most frequently reported psychological factors are stress, anxiety, distress, and depressive mood[6,7].

The aim of this study was to assess the relationship between the severity of depression and pain intensity in patients with LBP.

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Subjects and Methods

This cross-sectional study included 99 subjects aged 21-81, who presented to the Split University Hospital Center in Split, south Croatia. Study patients presented consecutively to the neurology outpatient clinic from October 2012 to October 2013. The interview was conducted by a trained neurologist who completed the questionnaire. Verbal consent was obtained from each patient after being explained the objective of the study and its importance for the community. The study excluded patients aged <18 and >85, patients with any cognitive or physical impairment, and patients who refused to give consent to take part in the study.

The survey instrument was tested on 99 patients that presented to the Split University Hospital Center and validated the questionnaire. A total of 99 patients with LBP and free from any neurologic deficiency were included in the analysis. There was no patient dropout for any medical problem. At baseline, a comprehensive clinical interview was applied consisting of demographic variables, history and clinical characteristics of pain, measurements of pain intensity using the visual analog scale (VAS), general health and depression. Clinical examination was carried out, followed by information according to clinical guidelines for acute LBP. The first part of the questionnaire included sociodemographic details of the patients and other factors associated with LBP. The second part was Hamilton depression scale-17 (HAD-17)[8], a questionnaire consisting of questions about symptoms and signs of mental disorders such as anxiety and depression. Patients were asked to answer the questions by grading them from zero to four or from zero to two. Eight items were scored on a 5-point scale, ranging from 0=not present to 4=severe. Nine items were scored as 0-2.

Low back pain patients were divided into three groups according to magnetic resonance imaging (MRI) finding and VAS score: mild, moderate and severe LBP. HAD-17 was used to assess depression. According to HAD-17 score, depression is graded as absent (0-7), mild (8-13), moderate (14-18), severe (19-22) and very severe (>22).

All data were analyzed using the Statistica 7.0 statistical package (StatSoft, Inc., Tulsa, USA). Categorical and ordinal data were tabulated using frequencies and percentages. Kruskal-Wallis test was used to compare variables for more than two groups. Mann-Whitney test was performed to compare the mean values of two quantitative samples. All tests were carried out with the statistical significance set at 95% ($p<0.05$).

Results

The present study included 99 subjects with LBP, 36 (36%) men and 63 (64%) women. Out of 99 LBP patients, 26 (26%) were free from depression, whereas 73 (74%) had some degree of depression. Mild depression was recorded in 27 (37%) and moderate, severe or very severe depression in 46 (63%) patients.

Age and gender characteristics of study subjects according to their LBP status are shown in Table 1. There was a statistically significant age difference according to LBP groups (Kruskal-Wallis test: $\chi^2=6.1$; $p=0.048$). There was no statistically significant gender difference according to LBP groups (Kruskal-Wallis test: $\chi^2=1.9$; $p=0.387$) (Table 1).

The group of patients with mild LBP was younger than the group of patients with moderate LBP (Mann-Whitney test: $Z=2.4$; $p=0.018$), with no age difference from the group of patients with severe LBP (Mann-Whitney test: $Z=1$; $p=0.317$), or between the groups of patients with moderate and severe LBP (Mann-Whitney test: $Z=1.3$; $p=0.179$).

In the group of patients with severe LBP, all patients had some degree of depression. In the group of patients with mild LBP, absence of depression was 1.7 times more frequent than in the group of patients with moderate LBP. Mild depression was 1.38 times more frequent in the group of patients with severe

Table 1. Median age (min-max) and number (%) of patients according to low back pain groups

		Low back pain			
		Mild	Moderate	Severe	p*
Age (yrs)		51 (23-77)	60 (21-76)	53 (33-81)	0.048
Gender	Male	8 (27)	19 (42)	9 (37)	0.387
	Female	22 (73)	26 (58)	15 (63)	

*Kruskal-Wallis test

Table 2. Number (%) of patients according to depression and low back pain groups

		Low back pain			
		Mild	Moderate	Severe	p*
Depression	Absent	14 (47)	12 (27)	0 (0)	0.003
	Mild	8 (27)	11 (24)	8 (33)	
	Moderate, severe, very severe	8 (26)	22 (49)	16 (67)	

*Kruskal-Wallis test

LBP than in the group of patients with moderate LBP, and 1.22 times more frequent than in the group of patients with mild LBP. Moderate, severe and very severe depression was 1.36 times more frequent in the group of patients with severe LBP than in the group of patients with moderate LBP and 2.58 times more frequent than in the group of patients with mild LBP (Kruskal-Wallis test: χ^2=16.2; p=0.003) (Table 2).

Seventy (71%) LBP patients responded positively to the presence of general physical symptoms; 45 (64%) of them reported a feeling of heaviness or pain in the limbs and spine or a feeling of the loss of power, while 25 (36%) of them reported having all these symptoms. Other common symptoms were psychic anxiety (psychological fear) in 69 (70%), depressed mood in 66 (67%), disturbances of work and activity in 63 (64%), difficulty in falling asleep in 62 (63%) and sleep disturbances in 62 (63%) patients (Table 3).

Table 3. Number (%) of patients according to specific signs and symptoms of depression

Signs and symptoms	Absent	Present
Depressed mood	33 (33)	66 (67)
Feelings of guilt	53 (54)	46 (46)
Suicidal impulses	66 (67)	33 (33)
Difficulty in falling asleep	37 (37)	62 (63)
Sleep disturbances	37 (37)	62 (63)
Morning sleep disturbances	46 (46)	53 (54)
Disturbances of work and activity	36 (36)	63 (64)
Slowness (psychomotor inhibition)	71 (72)	28 (28)
Agitation	45 (45)	54 (55)
Psychic anxiety (psychological fear)	30 (30)	69 (70)
Somatic anxiety (somatic fear)	52 (53)	47 (47)
Gastrointestinal symptoms	67 (68)	32 (32)
General physical symptoms	29 (29)	70 (71)
Genital symptoms	72 (73)	27 (27)
Hypochondriac symptoms	64 (65)	35 (35)
Weight loss	74 (75)	25 (25)

Thirty-six (36%) patients recognized that they were depressed, 23 (23%) patients recognized that they were ill but attributed it to poor diet, climate, too hard work, infection, or the need to rest, while 40 (41%) patients completely denied the illness.

Discussion

Low back pain is widely considered as a biopsychosocial problem[9]. The physical and psychological stressors are known to increase LBP risk. The data revealed significant association between the prevalence of psychological distress and LBP, which is in accordance with observations on the disease severity[5,10]. LBP symptoms were consistently more common in women (64%) compared to men (36%). Other studies have also reported similar findings of women being more likely to present with LBP than men[11].

Sociodemographic variables such as age and gender play a major role in the development of LBP and intensity of pain. In the study sample, the occurrence of LBP increased with increasing age to up to 55 years and then decreased gradually thereafter[12]. In our study, we showed that there was no gender difference among LBP groups, but patients with mild LBP were younger than those with moderate LBP.

In the group of patients with severe LBP, all patients had some degree of depression and patients with a severe form of LBP had a higher incidence of moderate, severe and very severe depression. Seventy (71%) LBP patients responded positively to the presence of general physical symptoms. Only 36% of patients recognized that they were depressed and only 23% patients recognized that they were ill but attributed it to poor diet, climate, too hard work, infection or the need to rest.

Low back pain is a stress factor in itself but when coupled with depression, they can be regarded as two symptom complexes that affect each other in negative ways. When pain, stress and depression become overwhelming and there are few internal resources

available, stress seems to become prominent[13]. The link between pain in LBP and depression appears to be a shared neurologic pathway. Response to painful physical stimuli is moderated in the brain by serotonin and norepinephrine, which also affect mood[14]. The relation between depression and disability can be explained by the fact that individuals who are unable to perform their activities because of pain feel disabled and powerless towards it. Besides, depressed patients tend to get more isolated and less motivated to involve in active treatment strategies. Negative thoughts and fatigue as frequent symptoms in depression can also interfere in the form of coping with pain and contribute to the presence of disability. Therefore, treating depressive symptoms can be an effective strategy to minimize disability[15]. Our results indicated a correlation between depression and LBP. Depression is a condition that worsens the prognosis of LBP and it is poorly recognized and treated in these patients[16].

Determination of the frequency and intensity of LBP and related factors is needed for the prevention and management of pain. Mood disorders and self reported restriction in daily activities should be screened in patients with LBP. Clinicians should pay attention not only to clinical examination but also view in detail the prognostic factors that bridge the transition from acute to chronic disabling pain.

In conclusion, the study findings revealed that LBP is a common problem in the general population. The data indicated significant association between the severity of LBP and the severity of depression. Further research is needed to verify whether interventions focused on these risk factors as depression can reduce or prevent disability in LBP patients.

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Sažetak

TEŽINA DEPRESIJE U BOLESNIKA S KRIŽOBOLJOM

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Cilj ovoga istraživanja bio je utvrditi učestalost depresije među bolesnicima s križoboljom, istražiti njihova sociodemografska obilježja te odnos između depresije i intenziteta boli u donjem dijelu leđa. Istraživanje je provedeno na 99 bolesnika koji su posjetili Kliniku za neurologiju Kliničkog bolničkog centra Split, 36 (36%) muškarca i 63 (64%) žene. U 73 (74%) bolesnika utvrđen je neki stupanj depresije. Svi bolesnici s teškom križoboljom imali su neki stupanj depresije. Umjereno teška, teška i vrlo teška depresija bila je 1,36 puta češća u skupini bolesnika s teškom križoboljom nego u skupini bolesnika s umjereno teškom križoboljom te 2,58 puta češća nego u skupini bolesnika s blagom križoboljom (χ^2=16,2; p=0,003). Najčešći simptomi među bolesnicima bili su opći fizički simptomi (n=70, 71%), psihička tjeskoba (n=69, 70%) i depresivno raspoloženje (n=66, 67%). Može se zaključiti da je depresija teža u bolesnika s teškom križoboljom nego u onih s blagom ili srednje teškom križoboljom.

Ključne riječi: *Depresija; Križobolja; Psihijatrijski status, procjena stupnja; Hamiltonova ljestvica depresije*