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Original Article

Examination of the patients applying to the physical therapy unit of a hospital due to low back pain

Bir hastanenin fizik tedavi ünitesine başvuran bel ağrısı şikâyeti olan hastaların irdelenmesi

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ABSTRACT

Introduction: This study analyzes factors influencing low back pain in patients admitted to the physiotherapy unit of an education and research hospital.
Methods: The study sample included 102 patients who applied to the physiotherapy unit and volunteered to join the study. The data were collected using a 23-items questionnaire created by the authors based on a review of the literature. The data were entered into the SPSS Program For comparisons, p values below 0.05 were deemed to be statistically significant.
Results: The mean age of the participants was 46.7±14.4 years. By occupation, low back pain was most common among housewives. Of the patients who suffered from lower back pain, 57.8% were overweight or obese. Of those experiencing lower back pain, 73.5% were standing for long time periods, and 67.6% were lifting heavy loads. Of the patients, 69.6% had lower back pain in their families, and 29.4% of the family members with lower back pain were their mothers.
Of the patients, 70.6% received drug therapy for the pain. The frequency of low back pain among patients who did not receive drug therapy was higher than that of the patients who received pain medications ($p<0.05$). Of the patients who had low back pain attacks 11 times or more in a year, the percentage of smokers was 66.7%, while this rate was 35.7% among nonsmokers ($p<0.05$). The increase in low back pain with body mass index was not statistically significant ($p>0.05$).
Conclusion: Patients applied to the hospital due to low back pain report lifting heavy loads or prolonged standing. Smoking increases the frequency of low back pain. Patients with low back pain also tend to have family members with the condition. With appropriate measures to reduce risk factors, the frequency of low back pain, which hinders daily life activities, can be reduced.
Keywords: low back pain, hospital, risk factors

ÖZ

Giriş: Bu çalışma; Eğitim ve Araştırma hastanesi Fizik Tedavi Ünitesine başvuran hastalarda, bel ağrısı ve etkileyen faktörleri araştırmak amacıyla yapılmıştır.
Yöntem: Bu araştırma eğitim ve araştırma hastanesi fizik tedavi ve rehabilatasyon ünitesine başvuran ve çalışmaya gönüllü olarak katılmayı kabul eden, bel ağrısı olan 102 hastada yapılmıştır. Araştırmada veri toplama aracı olarak; gerekli literatür taraması sonucunda araştırmacılar tarafından oluşturulan ve 23 sorudan oluşan anket formu uygulanmıştır. Veriler SPSS paket istatistik programına kaydedilmiş olup, karşılaştırmalarda $p<0,05$ istatistiksel olarak anlamlı kabul edilmiştir.
Bulgular: Araştırma kapsamına alınan katılımcıların yaş ortalaması 46,7±14,4 yıldır. Meslek grupları içerisinde bel ağrısı en fazla ev hanımlarında görülmekteydi. Bel ağrısı olanların %57,8'i fazla kilolu veya obezdi. Bel ağrısı olanların %73,5'i uzun süreli ayakta kalmaya %68,6'sı ise ağır yük kaldırmaya maruz kalmaktaydı. Hastaların %29,4'nün annesinde olmak üzere %69,6'sının ailesinde bel ağrısı vardı. %70,6'sı belinin ağrısı için bir ilaç tedavisi almıştı. İlaç tedavisi alanların bel ağrısı sıklığı, almayanlara göre daha fazlaydı ($p<0,05$). Bir yılda 11 kez ve daha fazla bel ağrısı çeken kişilerde sigara içme oranı %66,7 iken, sigara içmeyenlerde bu oran %35,7 bulundu ($p<0,05$). Beden kitle indeksi arttıkça bel ağrısı sıklığı artmasına rağmen, bu artış anlamlı değildi ($p>0,05$).
Sonuç: Bel ağrısı şikâyeti ile başvuran hastalar daha çok ağır yük kaldırdıklarını veya uzun süre ayakta kaldıklarını belirtmişlerdir. Sigara kullanımı da bel ağrısını artırmaktadır. Bel ağrısı olanların ailesinde de aynı şikâyet bulunmaktadır. Risk faktörlerini azaltmaya yönelik önlemlerin alınması, günlük yaşam aktivitelerini engelleyen bel ağrısı sıklığının bir ölçüde azaltacaktır.
Anahtar kelimeler: bel ağrısı, hastane, risk faktörleri

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Introduction

Although low back pain (LBP) is not a life-threatening problem, it is a significant health issue concerning the cost of diagnostic approaches and treatment procedures, as well as the loss of working days especially in developed and industrialized societies [1]. Chronic LBP causes individual disability and high cost. Although the prognosis of initial lumbar pain is favorable, there is a high recurrence rate, and 20% of patients develop chronic problems with or without disability [2]. Many reasons can lead to LBP. In generally, soft tissue strains (lumbar strain) and muscular pain are the most common etiologies. According to the age groups, spondylolysis and spondyloarthropathies are more common among young people (especially those involved in sports activities), spinal cord pain and disc herniation between the ages of 20 to 60, and spinal stenosis or compression fractures after age 60 [3]. The daily living conditions, wrong and straining movements of those having sedentary lifestyles, prolonged sitting due to the occupation, genetic or anatomical mutations that cause weakening of the ligaments, or even increased depression and psychosocial factors can be listed among these reasons. In the business life, we experience the era of working by sitting. Faulty sitting increases the load and wears on the discs. Besides, the means of transportations used in daily life can lead to LBP. Vibrational loads in a car or bus can cause microtrauma to the lumbar vertebrae. Biomechanical loading occurs in professional drivers [4].

This this study aims to determine the factors that affect LBP, which leads to high treatment costs and frequent loss of labor.

Methods

This cross-sectional study was conducted among patients with LBP admitted to the physical therapy and rehabilitation unit of the Elazığ Training and Research Hospital between March-May 2015 and volunteered to participate. The ethical clearance was obtained from the Fırat University Non-Invasive Research Ethics Committee (Date 12/03/2015, number 8262107) and administrative permissions were obtained from the hospital management. After a vigorous literature review, the researchers prepared a questionnaire consisting of 23 items for data collection. The survey included two parts. In the first part, socio-demographic information on age, gender, marital status, educational level and occupation of the patients were queried. In the second part, there were questions about the possible factors affecting back pain. The legibility and understandability of the questionnaire were tested in 20 patients who were not included in the study sample. Per the data gathered at the piloting process, some amendments were done to the data collection tool.

Statistical Analysis

Statistical analysis for the evaluation of the data was done by the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 21.0. In the descriptive statistics, frequencies, percentages, mean ± standard deviations, and the Chi-Square test were used to present and compare the data. A p-value <0.05 was considered as statistically significant.

Results

Of the patients, 29.4% were aged 55 years or older, and the mean age was 46.7 ± 14.4 years; 68.6% were women, 76.5% were married, and 57.8% were housewives. While 20.6% of the patients in the 19-34 age group had LBP, this rate was 29.4% in the 55 years and older age group. Of the patients who participated in the study, 54.9% stated that they never used cigarettes, and 54.9% of the patients perceive their economic status as moderate (Table 1).

Table 1. Descriptive characteristics of the participants

Variables	n	%
Sex		
Male	32	31.4
Female	70	68.6
Age Group		
19-34	21	20.6
35-44	25	24.5
45-54	26	25.5
55 and above	30	29.4
Educational Status		
Illiterate-literate	36	35.3
Primary-Secondary School	38	37.3
High School	12	11.7
University	16	15.7
Marital Status		
Married	78	76.5
Single	14	13.7
Widowed	10	9.8
Occupation		
Housewife	59	57.8
Self-employed	18	17.7
Official	15	14.7
Laborer	5	4.9
Retired	3	2.9
Student	2	2.0

Smoking Status		
Smoker	30	29.4
Non-Smoker	56	54.9
Ex-Smoker	16	15.7
Alcohol Use		
Yes	11	10.8
No	91	89.2
Perceived Economical Status		
Excellent	0	0.0
Good	30	29.4
Medium	56	54.9
Low	16	15.7

As seen in Table 2, 41.2% of the patients with LBP reported the frequency of LBP complaints as 1-5 times a year, while 31.4% had constant LBP.

Table 2. Distribution of the frequency of back pain within a year

Low back pain attacks per year	n	%
1-5 times	42	41.2
6-10 times	12	11.7
11 times or more	16	15.7
Permanent	32	31.4
Total	102	100.0

Of those with LBP, 73.5% were subject to long-term standing, and 68.6% were subject to heavy-weight lifting (Table 3).

Table 3. Distribution of the exposure factors during work

Factors exposed (n=102)*	n	%
Long-term standing	75	73.5
Heavy lifting	70	68.6
Stressful work environment	57	55.9
Working in inconvenient body positions	46	45.1
Exposure to extreme cold or heat	38	37.3
Prolonged sitting	32	31.4
Extended driving	10	9.8
Prolonged traveling	6	5.9
Exposure to protracted vibration	7	6.9

* Participants may have given more than one response.

All patients with LBP had pain spreading to the leg, followed in frequency by strength loss and a crick in the back (Table 4).

Table 4. Distribution of symptoms in patients with low back pain

Symptom (n=102)*	Yes		No	
	n	%	n	%
Pain spreading to the leg	102	100.0	0	00
Loss of strength	45	44.1	57	55.9
Crick in the lower back	44	43.1	58	56.9
Numbness in the leg or foot	23	22.5	79	77.5
Urine or stool incontinence	22	21.6	80	78.4
Drop foot	6	5.9	96	94.1

* Participants may have given more than one response.

Of the patients, 69.6% had complaints of LBP in the family members; 29.4% being in the mothers (Table 5).

Table 5. Presence of low back pain in the family members

Back pain in family members (n=102)	n	%
Yes	71	69.6
No	31	30.4
Family member with back pain (n=71)		
Mother	30	29.4
Father	5	4.9
Spouse	8	7.8
Child	9	8.8
Sibling	19	18.7

AS presented in Table 6, 70.6% of the patients with LBP who joined the study had received some treatment. When the treatment types were examined, medical treatment ranked first, followed by physical therapy, traditional methods, and surgery.

Table 6. History of management of the low back pain among the participants

Treatment history (n=102)	Yes		No	
	n	%	n	%
Received some treatment	72	70.6	30	29.4
Treatment modality (n =72)*				
Physical therapy	28	38.9	44	61.1
Medical management	64	88.9	8	11.1
Traditional medicine	13	18.1	59	81.9
Surgical intervention	12	16.7	60	83.3

* Participants may have given more than one response.

The Smoking rate of people experiencing LBP 11 times or more in one year was 66.7%, while it was 35.7% among the non-smokers; This difference was statistically significant ($p < 0.05$). Of the patients with LBP, 57.8% were overweight or obese. Although the frequency of LBP increased with increased body mass index, this increase was not statistically significant ($p > 0.05$). Of the patients with back pain, who had eleven or more attacks in one year 55.6% received some treatment, and 26.7% had no treatment ($p < 0.05$) (Table 7).

Table 7. Distribution of low back pain frequency according to some patient characteristics

Variable	Frequency of Low Back Pain				
	10 or ↓		11 or ↑		Test
Smoking status	n	%	n	%	
Non-smoker	35	64.3	20	35.7	$\chi^2=7.57$
Smoker	10	33.3	20	66.7	P=0.023
Ex-smoker	8	50.0	8	50.0	
Body mass index					
Normal	27	62.8	16	37.2	$\chi^2=3.47$
Overweight	17	50.0	17	50.0	P=0.176
Obese	10	40.0	15	60.0	
Treatment for back pain					
Yes	32	44.4	40	55.6	Fisher's Exact test
No	22	73.3	8	26.7	p=0.009

The frequency of 11 or more LBP in a year was higher in women who had two or more pregnancies (47.1%) compared to those with one pregnancy or no pregnancy (%42.9); which was not statistically significant ($p>0.05$).

Discussion

In this study, the prevalence of LBP was higher among females compared to males. Similarly, in the study of both Bejia et al. and Eryavuz et al., the prevalence of LBP were higher in women than in men [5, 6]. In another study, 63.7% of the patients with LBP were reported to be females [7]. Altinel et al., on the other hand, reported no difference in the frequency of LBP between the genders [8]. Kramer stated that the incidence of LBP was higher in men [9]. Due to hormonal changes related to the menstrual cycle, women are more susceptible to trauma, which may be a reason for the more common complains among women [10]. In our study, 79.4% of the participants with LBP were found to be in the 35 years or older age group (Table 1). As age increases, the frequency of LBP increases. Suyabatmaz's study reported that patients were more likely to be present at the end of the third decade [11]. In a cohort study, the prevalence of LBP was reported to be highest in the age group of 40-60 years [12]. Higher frequencies of LBP are expected in advanced age, and our study is compatible with the above publications.

In our study, 35.3% of the participants with LBP were illiterate, 37.3% were secondary school graduates, 11.7% were high school graduates, and 15.7% were university graduates. As the level of education increases, the frequency of LBP decreases. In one study, 30.3% of people with primary and secondary education and 19.2% of those with high school or higher education had LBP [13]. In another study, in contrast to 45.8% of middle school graduates, 51.2% of illiterate patients complained of LBP [14]. Our research has similar findings with the literature. People with low levels of education may be at increased risk of working more heavily and being exposed to more stress. People with low levels of education may be at increased risk due to more severe work and exposure to stress [15]. In our study, 57.8% of the participants were housewives. The most common occupation with LBP is housewives. According to one study, 45.9% of people with LBP were housewives [7]. In fact, Ayvat et al. reported that even 52.5% of patients with LBP were housewives [13]. In this study, we found similar results. This may be because housewives are more exposed to physical stresses at home. On the other hand, in our study, 89.2% of the participants did not use alcohol. Ayvat et al. reported that there was no relationship between alcohol intake and LBP [13]. Again this research supports our findings.

In our study, the factors that pose a risk for the LBP were found to be standing for extended durations, carrying heavy loads, and stressful working environment (Table 3). In a study by Bejia et al., the lumbar pain was mostly observed in individuals who were standing for a long time and lifting heavy loads [5]. In a study conducted among hospital workers, Karahan et al. reported that patients with LBP and stressful work environment had significantly higher LBP prevalence [16]. In the study of Bakırcı et al., 59.3% of the participants reported that mechanical lumbar pain had an

overt or partial relationship with the work environment [17]. The above studies support the findings of our work. In our study, all participants (100%) suffered from pain during the attacks followed by weakness as the second most frequent complaint (44.1%, Table 4). Karadağ et al. reported that the most common complaint was back pain (present in all patients) followed by a loss of strength in 83.7% of the participants [18]. In our study, the majority of the participants with LBP had a similar condition in their families (Table 5). In a study, 57.9% of employees with LBP were found to have LBP in the family [8]. Since genetic factors are accused in the etiology of LBP, it is expected to see LBP also in family members [19].

The rate of smoking was 66.7% in people who had LBP 11 times or more within a year, which was 35.7% in non-smokers (Table 7, $p < 0.05$). Boshuizon et al. investigated the relationship between smoking and LBP in different occupational groups and reported that this association was only seen in patients with heavy physical activity [20]. In a study performed by Altınel et al., on the other hand, it was reported that smoking increased the risk of back pain but did not increase its frequency [8]. It is claimed that cigarette disrupts the nutrition of the disc, causing progressive disc degeneration, while increased oxygen levels cause hyalinization and necrosis of nucleus pulposus [21]. Also in this regard, our study coincides with the literature. In our study, 76.5% of the participants did not do any exercise. Physical exercise is both preventive and curative for LBP [22]. It would be appropriate to conduct studies by directing the community to physical activity and studying its therapeutic and preventive effects in LBP.

Conclusion

Patients presenting with LBP stated that they were lifting hefty loads or standing for prolonged times. More than half of those with LBP were overweight or obese. Women applied more frequently to the health institution due to LBP. On the other hand, there is a high possibility that patients with LBP have the same complaint in other family members. Also, smoking increases back pain. Keeping the body mass indexes within the reasonable limits, cessation of smoking, prevention of long-term standing, and training people on the techniques of lifting and handling heavy loads may reduce the complaints of LBP.

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