



# Low Back Pain Management Methods Used by the Patients After Lumbar Disc Herniation Surgery\*

## Lomber Disk Herni Cerrahisi Sonrası Hastaların Bel Ağrısını Yönetmede Kullandıkları Yöntemler

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### ABSTRACT

**Objective:** Lumbar disc herniation is a common condition that occurs within a disc and low back pain is the most frequently seen symptom. In this study, it was aimed to evaluate the use and helpfulness of the methods practiced by patients to manage low back pain after lumbar disc herniation surgery.

**Methods:** This study was carried out with 99 voluntary patients who were hospitalized in the neurosurgery department of a university hospital in Turkey, between April 18, 2016 and December 14, 2017. Data were collected using a Personal Information Form, Pain Management Inventory, and Visual Analog Scale.

**Results:** The mean low back pain severity score of the patients was  $6.41 \pm 2.08$ . To relieve low back pain, the most used pain management method and the first method identified by the patients as most helpful in relieving pain was taking prescribed medication.

**Conclusion:** Study findings suggest that patients who suffer low back pain after lumbar disc herniation surgery used prescription medicine and find it helpful. Because ongoing pain medication may mask the symptoms of lumbar disc herniation progression, it is important that nurses who work at neurosurgery department should provide sufficient information for the patients about the pain management after surgery.

**Keywords:** Low back pain, lumbar disc herniation, pain management, patient, surgery nurse

### Öz

**Amaç:** Lomber disk hernisi diskte meydana gelen ve en sık görülen semptomu bel ağrısı olan yaygın bir durumdur. Bu çalışmada, lomber disk herni cerrahisi sonrası bel ağrısını yönetebilmek amacıyla hastaların uyguladığı yöntemlerin kullanılma ve yararlılık durumlarını belirlemek amaçlandı.

**Yöntem:** Çalışma, 18 Nisan 2016 ve 14 Aralık 2017 tarihleri arasında, Türkiye'deki bir üniversite hastanesinin nöroşirürji kliniğine yatırılan 99 gönüllü hasta ile yürütüldü. Veriler, Kişisel Bilgi Formu, Ağrı Yönetimi Envanteri ve Görsel Ağrı Ölçeği kullanılarak toplandı.

**Bulgular:** Hastaların ortalama bel ağrısı şiddeti skoru  $6,41 \pm 2,08$  idi. Bel ağrısını hafifletmek için, hastalar tarafından en çok kullanılan ve ağrıyı gidermede en yararlı olduğu belirtilen yöntemin reçeteli ilaç kullanımı olduğu belirlendi.

**Sonuç:** Çalışma bulguları, lomber disk herni cerrahisi sonrası bel ağrısı olan hastaların, reçeteli ilaç kullandıklarını ve bunu faydalı bulduklarını gösterdi. Ağrı kesicilerin sürekli kullanılması durumunda herninin ilerleme belirtileri maskelenebileceğinden, beyin cerrahisi bölümünde çalışan hemşirelerin ameliyat sonrası dönemdeki hastalara ağrının yönetimi hakkında bilgilendirmede bulunması önemlidir.

**Anahtar kelimeler:** Bel ağrısı, lomber disk herni, ağrı yönetimi, hasta, cerrahi hemşiresi

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## INTRODUCTION

Lumbar disc herniation (LDH) is a common condition that occurs within a disc and low back pain (LBP) is the most common symptom<sup>(1,2)</sup>. In a meta-analysis by McGirt et al.<sup>(3)</sup>, of 54 studies on the postoperative outcomes of lumbar surgery the authors reported that recurrent or persistent back pain existed after surgery. In a large observational study conducted in 306 centres in Spain, the researchers reported that 30.4% of patients with LDH had LBP<sup>(4)</sup>. Studies on the Turkish population also have shown a high prevalence of LBP<sup>(5)</sup>. Kuru et al.<sup>(6)</sup> found that LBP was prevalent in 62.5% of LDH patients, and Altinel et al.<sup>(7)</sup> determined that the prevalence of LBP was 51%.

In the literature, LBP is presented as a health problem that restricts physical disability, imposes an economic burden, and causes anxiety and depression<sup>(4,8,9)</sup>. To manage this pain, conservative treatment for 6-8 weeks without surgical intervention is commonly recommended. If the pain is intolerable and there is loss of neurological function, surgical treatment is commonly used to prevent the pain from becoming chronic and development of the side effects of analgesics<sup>(10,11)</sup>. Although studies show success after lumbar surgery, pain may persist for many years afterward<sup>(12,13)</sup>. Silverplats et al.<sup>(14)</sup> reported that back pain in 23% of 171 patients was worse after LDH surgery. A systematic literature review showed that 3%-36% of patients reported back pain after surgery<sup>(15)</sup>.

Because LBP is a serious problem even after surgery, managing this pain is important. In a study, it was reported that 94.6% of patients with LDH preferred consulting a physician for their LBP and they used alternative methods such as physical therapy, exercise, rest, or prescription medicines to manage their pain<sup>(15)</sup>. In a survey conducted by Gadraj et al.<sup>(11)</sup>, administration of analgesics was reported as the most effective pain management method, followed by steroid injections, exercise, and counselling. Thackeray et al.<sup>(16)</sup> reported that 44% of patients used non-steroidal anti-inflammatory drugs (NSAIDs), 42% of them received injections, and 40% of them had physical therapy to manage the pain associated with LDH. A review by White et al.<sup>(17)</sup> on the efficacy of drug use for back pain has found strong evidence

for the efficacy of NSAIDs. A study conducted in Turkey reported that use of hot and cold compresses, herbal preparations, and the application of woollen cloth on the lower back were the primary pain management methods used by patients with LDH<sup>(18)</sup>.

Although there are many methods for managing LBP, information about the methods used by patients with LBP after LDH surgery is lacking. In addition, healthcare providers, especially physicians and nurses working at neurosurgery departments, need to better understand the use and helpfulness of the pain management methods used by patients to relieve their LBP. Therefore, evaluation of these pain management methods is important to help physicians, nurses and other healthcare providers navigate the treatment procedures. This study aimed to evaluate the use and helpfulness of the methods used by patients to manage LBP after LDH surgery.

## METHODS

### Study design and participants

This descriptive study was carried out with patients who were hospitalized in the neurosurgery department of a university hospital in Eastern Thrace, Turkey, between April 18, 2016 and December 14, 2017. The university hospital was chosen for the study because it provides healthcare to the large region of Eastern Thrace. Cooperative patients over 18 years of age without acute pain who had a primary diagnosis of LDH, experienced LBP for at least 12 weeks, and was hospitalized for a second surgery for LDH were included in the study. On the basis of the Pain Management Inventory findings ( $3.29 \pm 1.52$  for the first method) in Özel et al.<sup>(19)</sup>, with 95% confidence level and 0.3 error margin of power analysis, the sample size is calculated as 99.

### Data collection and instruments

Data were collected using a Personal Information Form, Pain Management Inventory, and Visual Analog Scale (VAS). The Personal Information Form, developed by the researcher after a literature review<sup>(11,18)</sup> comprised eight questions, including gender, age, education level, working status, marital status, LBP severity, history of consultation with a physician for pain, and history of LDH surgery.



The Pain Management Inventory was developed by Davis and Atwood <sup>(20)</sup> to examine the use and helpfulness of 15 pain self-management methods. A patient indicates the pain management methods used in the preceding week and then rates the helpfulness of each method using one of the responses: not helpful (1), low helpful (2), slightly helpful (3), moderately helpful (4), very helpful (5), extremely helpful (6).

The VAS was developed by Price et al. <sup>(21)</sup> to measure the severity of pain using a 10-cm-long horizontal line on which zero means no pain and 10 means the most severe pain. Patients were asked to mark the severity of their current LBP.

**Data analysis**

The IBM SPSS Statistics ver. 21.0 (IBM, Armonk, NY, USA) software package was used for coding and analysing the data. The data were analysed using the mean, standard deviation, frequency, and numbers with percentages.

**Ethical consideration**

The directorate of the hospital granted permission to conduct this study (79056779-600) and the study was approved by the Ethics Committee of the Medical Faculty at Trakya University (2016/54). Information about this study was provided to the patients and they were invited to participate in the study. Informed consent was obtained from participating patients.

**RESULTS**

Of the 99 patients [68 females (68.7%) and 31 males (31.3%), mean age = 59.32±11.70 years] included in this study, 92.9% had graduated from primary and high school, 66.7% were not working, and 85.9% were married. Upon hospitalization, the mean pain severity score of the patients for LBP was 6.41±2.08. In addition, 86.9% of the patients had consulted a physician after their previous LDH surgery (Table 1).

To relieve LBP, the most frequently used pain management methods were (a) taking prescribed medication (97%), (b) avoiding activity that increases pain (92.9%), and (c) focusing on personal supportive beliefs such as praying (90.9%). The first three methods identified by the patients as most helpful in relieving pain were (a) taking prescribed medication,

(b) focusing on personal supportive beliefs such as praying, and (c) avoiding activity that increases pain.

**Table 1. Demographic Characteristics of Patients**

Demographic characteristics	n	%
<b>Gender</b>		
Female	68	68.7
Male	31	31.3
<b>Education level</b>		
Primary and high-school	92	92.9
University and over	7	7.1
<b>Working status</b>		
Working	33	33.3
Not-working	66	66.7
<b>Marital status</b>		
Single	14	14.1
Married	85	85.9
<b>Consulting a physician for LBP</b>		
Yes	86	86.9
No	13	13.1
		<b>X±SS</b>
<b>Age</b>	59.32±11.70	
<b>LBP severity</b>	6.41±2.08	

*LBP: low back pain*

**Table 2. Use and Helpfulness of Pain Management Methods**

Methods	Use n (%)	Helpfulness X±SS
Applying massage to painful area	53 (53.5)	2.23±1.51
Using methods to help control stress such as speaking with someone	72 (72.7)	2.78±1.54
Applying cold to painful area	12 (12.1)	1.17±0.63
Using distracting techniques such as watching TV	68 (68.7)	2.66±1.55
Using a heated pool, tub, or shower	61 (61.6)	2.60±1.71
Taking medicine not prescribed by a physician	35 (35.4)	2.03±1.58
Exercising	54 (54.5)	2.48±1.75
Applying heat to painful area	47 (47.5)	2.42±1.78
Taking antidepressants prescribed by a physician	22 (22.2)	1.64±1.38
Using relaxation methods such as meditation or guided imagery	15 (15.2)	1.39±1.07
Bracing or splinting the painful area	54 (54.5)	2.66±1.81
Taking medicine prescribed by a physician	96 (97.0)	4.38±1.37
Using biofeedback as "I can do ..."	64 (64.6)	2.49±1.61
Avoiding activity that increases pain	92 (92.9)	3.70±1.59
Focusing on personal supportive beliefs such as praying	90 (90.9)	4.16±1.58

**DISCUSSION**

Most of the patients (86.9%) in this study had consulted a physician about their pain after previous surgery. Although surgery is reported to be beneficial for pain relief <sup>(22)</sup>, the patients in the present study

reported that their average pain severity score was  $6.41 \pm 2.08$  despite having undergone surgery. Similarly in Turkey, Çilingir et al. <sup>(18)</sup> reported that 60.9% of LDH patients had indicated an above moderate pain severity score when admitted to hospital. Gadrajaj et al. <sup>(11)</sup> found that the severity of pain was the main reason why LDH patients undergone surgery. In a study by Ramos et al. <sup>(23)</sup>, 50% of the patients with LDH indicated that their average pain severity score was  $6.4 \pm 1.95$  before surgery. Similarly, Mancuso et al. <sup>(12)</sup> found that the pain severity scores of 46% of patients with LBP were between 7 and 9 before lumbar surgery. Aichmair et al. <sup>(24)</sup> studied LDH patients for a postoperative follow-up period of at least 5 years and reported that the average severity score for LBP was  $6.3 \pm 3.7$  before reoperation. Results indicate that, LBP persists after LDH surgery. Because pain severity is associated with many psychological, cultural, clinical, and surgical variables, it may vary depending on the study settings and patients.

In this study, prescribed medication was identified by the patients as the most used and most helpful pain management method. NSAIDs and acetaminophen were also recommended to manage pain after surgery with a level of evidence of B according to the North American Spine Society guidelines <sup>(25)</sup>. Gadrajaj et al. <sup>(11)</sup> researched the management of symptomatic LDH and found that pain medication was considered the most effective pain management method. A study conducted in Sao Paulo found that patients with LDH took analgesics to manage their LBP <sup>(23)</sup>. Similarly, in study by Thackeray et al. <sup>(16)</sup>, medication was the most common choice for nonsurgical treatment of pain by patients with LDH. Gadrajaj et al. <sup>(11)</sup>, reported that pain medication was expected to be the most effective pain management method. These findings suggest that patients who suffer LBP use prescription medicine. Because it is prescribed by the physician, and/or it is a quick way to relieve pain. Since chronic use of pain medication may mask the symptoms of progressive LDH, it is important that healthcare providers especially physicians and nurses who work at neurosurgery department should provide detailed and sufficient information to their patients about the importance of pain signals after surgery. Furthermore, healthcare providers should get the knowledge of mostly used pain management

methods by their patients to minimize the risks and increase the benefits of these pain management methods.

The second most frequently used and the third most helpful pain management method among our patients was avoidance of activity that increases pain. A study conducted in Korea found that patients with chronic back pain used resting to manage their pain <sup>(26)</sup>, and a study conducted in Poland reported that resting was frequently used to manage LBP <sup>(27)</sup>. A study from the UK showed that exercise-related pain in patients with LBP promoted resting <sup>(28)</sup>. Bed rest is recommended for patients with LBP only if exercise increases pain severity <sup>(29)</sup>. According to a clinical practice guideline of the American College of Physicians, moderate-quality evidence shows that pain can be managed with exercise rather than resting <sup>(30)</sup>. In the present study, 54.5% of the patients preferred exercising and stated that it was moderately helpful. In addition, a systematic analysis by Searle et al. <sup>(31)</sup> found that exercise had a more beneficial effect on chronic LBP than other treatments. Patients may prefer rest to manage their pain, but it is important to encourage patients to stay active and exercise.

In the present study, focusing on personal supportive beliefs such as praying was the third most used pain management method and the second most helpful method as reported by the patients. In a study, it was reported that praying was a frequently used LBP management method <sup>(27)</sup>. A study conducted in Bahrain reported that 15 of 18 patients used religious coping strategies to manage their LBP <sup>(32)</sup>. These results show that patients with LBP after LDH surgery prefer self-management to overcome their pain and find it helpful.

### Limitations

The study had some limitations to be noted. First, study was conducted in one neurosurgery service of a university hospital in Eastern Thrace of Turkey, thus, this may limit generalization of the results. Second, patients' pain management methods were explored with using an inventory. Future studies should focus on many other pain management methods.



## CONCLUSION and RECOMMENDATIONS

Pain due to LDH is a common problem for many patients and can be treated effectively using many conservative or surgical methods. However, patients may attempt to use many other methods that do not provide any benefit to them. Besides, these methods may result in disabilities or other health disorders. As the study findings suggest that prescribed drugs are frequently used among patients after LDH surgery, nurses should be aware of the common use of pain management methods in their patients to minimize their risks and gain their benefits. Moreover, it will be possible to consider their impacts on the current therapy of the patients and prevent the potential adverse effects.

Despite some limitations in this study, the results contributed specific information about the use and helpfulness of the pain management methods among patients with LBP after LDH surgery. This study identified that patients who suffer LBP after LDH surgery used prescription drugs and find them helpful. Because ongoing use of pain medication may mask the progression of symptoms of lumbar disc herniation, nurses who work at neurosurgery department should provide detailed and sufficient information about the importance of pain signals after surgery.

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