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RESEARCH ARTICLE

HEALTH-RELATED QUALİTY OF LİFE İN PATİENTS WİTH CHRONİC LOW BACK PAİN: EFFECTS OF PAİN, CLİNİCAL AND FUNCTİONAL STATUS ON QUALİTY OF LİFE

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ABSTRACT

Background: Low back pain (LBP) is a major medical, social, and economic problem in both developed and developing countries. It often affects all life domains from fairly basic self-care activities to advance and complex social interactions, work, and leisure activities and eventually has a profound impact on quality of life. The aim of the study was planned to investigate the health-related quality of life with chronic low back pain patients and to examine the effect of clinical and activity levels of patients on the quality of life.

Materials and Methods: Our study consisted of 400 patients who had a diagnosis of chronic low back pain in Orthopedics and Traumatology Department of DEU Medical Faculty Hospital. A total of 400 patients (200 male) and (200 female) were included, ranging in age from 18 to 62 years (mean ± SD 27.25 ± 10.68). Demographic data, occupational status, education status, body mass index (BMI). Pain were evaluated in our study. Visual analogue scale (VAS), functional status and quality of life were used in the Nottingham health profile questionnaire (NHP). Also the functional independence measures (FIM) were evaluated.

Result: patients and control groups were examined according to demographic characteristics; There was no statistically significant difference between the groups in terms of the sex ratios of the cases and the BMI values ($p > 0.05$). There was a statistically significant difference between groups in terms of age, occupation and educational status of the cases ($p < 0.05$). The VAS, NHP scores of the patient group were statistically higher than the control group, age and VAS pain scores ($p < 0.05$). The total FIM scores of the patient group were found to be statistically higher than the total FIM scores of the control group ($p < 0.05$). With the VAS values of the cases; There was a statistically significant correlation between NHP scores in the positive direction and total FIM score values in the negative direction ($p < 0.05$). There was a statistically significant correlation between total FIM scores and all other variables in the negative direction ($p < 0.05$).

Conclusion: In patients with chronic low back pain, the increase in pain severity resulted in a reduction in functional status and quality of life.

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INTRODUCTION

Lumbar pain, a common medical problem in industrialized countries, is becoming a growing public health problem. The prevalence of lifelong low back pain in industrialized countries exceeds 70% (Deyo and Weinstein, 2001). While 90% or more of these patients recover within the first 3 months, the remaining 10% of patients recover more slowly, recover more time, and demand intensive use of resources from health systems (Andersson, 1999). Lumbar pain is a condition in which every 5 out of 5 people live in their lives at least once and cause serious loss of function. Physically occurring pain can lead to severe functional disability that affects independence in everyday life (O'Sullivan, 2000; Tulner *et al*., 2002; Arokoski *et al*., 2001; Demoulin *et al*., 2007). Patients with chronic low back pain can be caused by pain, nociceptive, neuropathic or psychological processes, or a combination of these. Low back pain can adversely affect many basic activities and functional status of the patients such as standing, walking, sitting, dressing (Grabois, 2003; Rabini *et al*., 2007). In recent years, terms of well-being and quality of life obtained with patient-centered surveys have gained an important place in assessing health (Carod-Artal *et al*., 2009). Health can be expressed as the functional and health of the person and the increase in the quality of life. The functional situation is "to be able to achieve social participation without

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physical and mental restriction of the person". In determining the functional status, it focuses on performance in performing certain tasks, such as activities of daily living. Health status is expressed as "medical and functional wellness" and sometimes as an effect of disability (Livingston *et al*., 2007). The increase in the quality of life brings with it happiness and life satisfaction. Similarly, the World Health Organization has defined quality of life as "the way in which the individual judges his / her own situation in life, in the context of values, expectations, standards and related values of the environment in which individual is living (World Health Organization, 2001). There are many reasons for assessing health-related quality of life in patients with low back pain. For the clinician, evaluation of care needs, creation of treatment goals and planning of treatment will provide potentially useful information in assessing outcome and treatment outcomes of the patient overtime (Deveci, 2005). When we review the literature, we have not found much of a study that examines the relationship between the clinical status of patients with chronic low back pain (duration of complaints, type of complaint, waist region examination), and quality of life. With increasing number of studies examining quality of life in healthy and handicapped individuals, the factors affecting life satisfaction have become more questionable (Livingston *et al*., 2007). Our study was designed to investigate the health-related quality of life of patients with chronic low back pain, one of the common health problems in the general population, and to examine the effect of clinical and activity levels of patients on quality of life. Our hypothesis of our study is that patients with chronic low back pain have impaired health and quality of life and functional independence and how they affect pain severity.

MATERIALS AND METHODS

Patient Selection

This cross-sectional descriptive design study was conducted between 2013 and 2014. After the minimum sample width required by the power analysis (0.99) (Type II error 0.01) and Type I error (0.05) were determined as individuals in each group (187), the DEU Faculty of Medicine Orthopedics and Traumatology. A total of 200 patients were included in the study, 100 of whom were women and 100 of whom were men with chronic low back pain according to the criteria for taking history, physical examination, laboratory and radiological evaluations of policlinics. In the control group, 200 healthy individuals (100 women, 100 men) matched with their age and gender were included. The healthy control group was built around hospital staff, friends and family. Individuals in both groups were evaluated for age, gender, body weight, height, Body Mass Index (BMI), education status, occupation, patients complaints and surname.

Patient Group inclusion Criteria

- Applying to the DEU orthopedic polyclinic
- Having mechanical back pain for three months
- Eighteen years of age or older
- Being literate
- Good cognitive functions
- Not having neurological deficit

Control group Inclusion Criteria

- Lack of back pain for up to three months without working
- Absence of acute or chronic pain other than low back pain
- Being over eighteen years of age
- Being literate
- Good cognitive functions
- Non-acceptance criteria
- Patients eligible for surgery.
- Concomitant systemic disease other than hypertension,
- hypercholesterolemia and diabetes mellitus (type 2)
- Having inflammatory back pain (rheumatoid arthritis, seronegative spondyloarthropathy).
- Compression fracture (such as osteoporosis).
- Infection (discitis, spondylodiscitis, sacroileitis).
- Having back pain due to malignancy (primary or metastatic tumors).

Our work was planned in accordance with the Helsinki Declaration and approved by the Ethics Committee of the Hospital of the Medical Faculty of the DEU.

Work Independent Variables

- Age
- Length and body weight
- Gender
- personal history
- Family history
- Job

The visual analog scale (VAS) was used to assess patients' pain. The criteria used to assess the quality of life and health outcomes can be divided into two groups, generic and disease specific. Generic criteria; which are used in the general population and which can be applied to a variety of health conditions and diseases. Disease-specific criteria are the only criteria used in that disease group. The Nottingham Health Profile is used as a generic criterion to assess quality of life. Nottingham Health Profile (NHP) was used to assess the quality of life for cases. Functional Independence Measure (FIM) was used to assess functional independence in daily life activities.

Data analysis

Statistical analysis of the data was made with 95% confidence in the SPSS 15.0 for Windows package program. Categorical variables were shown as "n" and "%", and continuous variables as "Mean ± standard deviation". Statistical analysis of Mann Whitney U was used for comparison of categorical data between groups of Pearson Chi-Square and comparison of continuous data among groups (since data were not normal). The relationship between age, BMI, VAS, NHP and FIM values was assessed by Pearson correlation analysis. Linear regression analysis was used to determine the quality of life scores of the functional independence scale and VAS pain scale scores, $P < 0.05$ was considered statistically significant.

RESULTS

A total of 400 patients were included in the study of patients with chronic low back pain to examine the relationship between pain , the Nottingham Health Profile and the Functional Independence Scale in terms of quality of life. 200 female of whom were 18 years old and over, and 200 were men.

Table 1. Demographic data

	Patient group (n=200)	Control group (n=200)	Total (n=400)	P
	Ort.± SS *(Min.-Max.)*	Ort.± SS *(Min.-Max.)*	Ort.± SS *(Min.-Max.)*	
Age	33.5±11.74 (18-68)	21.02±3.52 (18-48)	27.26±10.67 (18-68)	<0.001*
BMI	23.71±1.84 (19.3-31.25)	23.49±1.7 (18.5-33.3)	23.6±1.79 (18.5-33.3)	0.129*
	n (%)	n (%)	n (%)	
Sex				
Male	100 (50)	100 (50)	200 (50)	1.000**
Female	100 (50)	100 (50)	200 (50)	
Job				
Student	64 (32.0)	194 (97.0)	258 (64.5)	<0.001**
Teacher	67 (33.5)	2 (1.0)	69 (17.3)	
Other	69 (34.5)	4 (2.0)	73 (18.3)	
Education status				
School and less than	50 (25)	4 (2)	54 (13.5)	<0.001**
University and more	150 (75)	196 (98)	346 (86.5)	

*Mann Whitney U, **Pearson Chi-Square

Table 2. Correlation analysis results for age and BMI values of patients and control group and VAS, NHP and total FIM values

		Patient Group		Control Group	
		Age	BMI	Age	BMI
BMI	r	0,226	1,000	0,191	1,000
	p	0,001		0,007	
VAS	r	0,190	0,016	0,102	0,142
	p	0,007	0,824	0,149	0,045
NHP Total Score	r	-0,029	0,028	0,030	0,125
	p	0,686	0,691	0,674	0,078
Pain	r	-0,062	-0,003	-0,023	0,116
	p	0,385	0,967	0,743	0,103
Physical activity	r	-0,100	-0,066	0,018	0,161
	p	0,160	0,350	0,797	0,023
Fatigue	r	0,072	-0,019	0,005	0,122
	p	0,308	0,792	0,943	0,086
Sleeping	r	-0.051	0.054	0,091	0,095
	p	0,474	0,444	0,198	0,180
Social isolation	r	0,024	0,127	-0,020	0,008
	p	0,738	0,073	0,775	0,907
Emotional reaction	r	0,028	0.053	0,078	0,133
	p	0,697	0,455	0,272	0,060
TOTAL FIM Score	r	-0,136	0,007	0.059	0,005
	p	0.055	0,921	0,406	0,948

Table 3. Results of linear analysis of VAS and total FIM scores for NHP scores in patients and control groups

	B	Std. Error	Beta	T	Sig.	95% CI		Adjusted R Square
Patient group								
VAS	3.466	0.243	0.713	14.291	<0.001	2.988	3.944	0.505
Total FIM Score	-0.537	0.042	-0.675	-12.862	<0.001	-0.619	-0.455	0.452
Control group								
VAS	3.274	0.126	0.879	25.894	<0.001	3.025	3.523	0.771
TOTAL FIM Score	-0.640	0.041	-0.739	-15.446	<0.001	-0.721	-0.558	0.544

Physical and social characteristics such as age (years), sex, education level, occupation were recorded in the cases included in the study. When the patient and control group were examined according to demographic characteristics; There was no statistically significant difference between the groups in terms of the sex ratios of the cases and the BMI values (p> 0.05). There was a statistically significant difference between groups in terms of age, occupation and educational status of the cases (p <0.05). (Table 1). When the results of correlation analysis for age and BMI values of patients and control group were compared with those of VAS, NHP and total FIM values (Table 2); Positive and statistically significant correlations were found between the age of the patient group, BMI and VAS values (p <0.05). Positive and statistically significant correlations were found between the ages of the control group and the BMI values and between the BMI and VAS values (p <0.05) (Table 3).

DISCUSSION

Low back pain is one of the important clinical tables that affect human life. 80% of people are believed to have been suffering from low back pain during their lifetime. Approximately 80% of low back pain due to mechanical reasons is recovered in a short period of time (5%) but lasts more than three months, resulting in chronic back pain (Dreyer *et al*., 2000). Our study has shown that the quality of life is very important in individuals with chronic low back pain and that the rehabilitation teams have problems in determining and solving problems such as pain, functional status and activity level that negatively affect the quality of life in individuals it has been tried not to show the necessity. In terms of parameters directly affecting each other, it is necessary to make appropriate approaches to the problems identified by questioning the parameters that are thought to affect the quality of life of the

evaluation programs of individuals with chronic low back pain. A multidisciplinary approach is often needed in the treatment of low back pain, which is quite common in the community and is one of the most expensive diseases in terms of cost of treatment, in case of labor loss. In recent years, the terms well-being and quality of life obtained with patient-centered surveys have gained an important place in assessing health (Carod-Artal *et al*., 2009). Health can be expressed as the improvement of the person's functional and well-being and the increase in quality of life. The functional situation is "to be able to achieve social participation without physical and mental restriction of the person". In determining the functional status, it focuses on performance in performing certain tasks, such as activities of daily living (Livingston *et al*., 2007). Hasanefendioğlu *et al*. related chronic health problems related to quality of life, clinical and functional status in patients with chronic low back pain. The mean age of healthy controls (49.7 ± 13.6), the mean age (50.2 ± 14.2) years (min: 20-max: 78 years) year (min: 21-mak: 73 years). When the education period and profession were taken into account between the patient and the control group, 61.5% of the patients were primary school graduates and 44.9% were housewife. The FIM score of SF-36 was found to be lower in women who were female, housewife, primary school graduate, waist-leg pain, and poor waist examination. SF-36 has a lower physical function, lower physical role, pain, emotional rollover sub scores, and a lower Physical Component Summary (FIM) score than healthy controls in patients with chronic low back pain. In this study, it was noted that patients with chronic low back pain, especially physical components of health-related quality of life, were worse than healthy controls and that physical severity of clinical quality and quality of life was negatively impacted by clinical severity, functional status (Hasanefendioğlu *et al*., **?**). Narin *et al*., In their studies examining the effect of physiotherapy program on functional capacity and quality of life in patients with chronic low back pain, are between the ages of 30 patients (29-74) years with chronic low back pain diagnosis and physiotherapist program. (63.3%) were female and 11 (36.7%) were male. The Pain Disability Index and Oswestry function test, which assessed functional impairment before and after treatment, showed a significant decrease after treatment. The quality of life scale was assessed both before and after functional evaluation.

When compared, physical function, role weakness, pain, general health, social function, role weakness, mental health evaluations were determined. In this study, the physiotherapy program was found to reduce the symptoms of low back pain and, most importantly, to improve quality of life by removing functional limitations in the daily activities of patients (Narin *et al*., 2008). In our study, a total of (200 male) and (200 female) were included, ranging in age from 18-62 (27,25 ± 10,68). When the education periods and professions were examined between the patient and the control group, 64 (32%), 67 (33%), 69 (34.5%) and 194 (97% , teacher (2) (1%) and the other (4) (2%). When we compare it with the literature, it is found that the average age is lower, while the number of students is higher when we look at occupational distributions, it is found that the other group is composed of active employees. In the literature, a more educated group opposition emerges as opposed to the studies carried out in our country regarding educational situations. With this result, even though the living conditions are becoming more technological, we can see that even in the younger generation, the level of education is high, but chronic waist pain is caused by the decrease of physical activity. Tarsuslu *et al*., In a study of the relationship between pain, depression, anxiety and functional independence and quality of life in individuals with chronic physical disabilities; Visual Analogue Scale to assess pain, Nottingham Health Profiles for quality of life, and Functional Independence Measure for functional status. There was a significant difference between the groups in terms of pain (VAS), functional independence (FIM) and quality of life (NHP) parameters in healthy and physically handicapped patients in the statistical analysis in terms of evaluation parameters. In healthy episodes, there was a strong negative correlation between quality of life, anxiety, and quality of life and depression. There was a strong negative correlation between quality of life and pain, depression and pain, and anxiety and pain on the positive side (Tarsuslu *et al*., 2010**).**

AY and EVCİK used the assessment of patients' waist pain according to the visual pain scale (VAS, 10 cm), and the Nottingham Health Profile (NHP) scale was used to assess the quality of life. The severity of pain and severity of depression in patients with chronic low back pain were closely related to the level of depression and the level of depression negatively affected the quality of life and functional status of the patients (Saime and EVCİK, 2008). Karayurt *et al*. Used the Patient Identification Form, the SF-36 Quality of Life Scale, and the Numerical Pain Scale in the collection of their data. It shows that after TENS application, many dimensions of the quality of life with pain are improved and the satisfaction of the nurses is high in this process. It is suggested that TENS should be used to reduce chronic pain and improve quality of life of patients (Karayurt *et al*., 2014).Gerbershagen *et al*. Studied the quality of life effect in patients with low back pain and used the pain disability index to assess pain, the SF-36 and the Nottingham Health Profile to assess quality of life (Gerbershagen *et al*., 2002).

In our study, visual pain scale, NHP for quality of life, and FIM for functional status were used in the literature to evaluate pain similar to the work done in relation to this topic. When the results of the correlation analysis for the age, BMI and NHP values of the cases are examined, There was a positive correlation between the age of the cases and all other variables and a statistically significant correlation was found. And also in patients with chronic low back pain, the quality of life of the functional state was found to be negative by increasing the severity of pain. Our results show that in patients with chronic low back pain, there is a decrease in functional status and quality of life due to the increase in pain severity and that it is consistent with the literature.

Conclusion

In patients with chronic low back pain, the increase in pain severity resulted in a reduction in functional status and quality of life

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