

RELATIONSHIP BETWEEN DISABILITY, PAIN INTENSITY AND QUALITY OF LIFE IN PATIENTS WITH CHRONIC NECK PAIN

RELAȚIA DINTRE DISABILITATE, INTENSITATEA DURERII ȘI CALITATEA VIEȚII LA PACIENȚII CU DURERE CERVICALĂ CRONICĂ

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Key words: Chronic Neck Pain, Neck Disability Index, Quality of Life.

Cuvinte cheie: durere cervicală cronică, Neck Disability Index, calitatea vieții.

Abstract. Objective: This study was conducted to determine the relationship between disability, pain intensity and quality of life in patients with chronic neck pain.

Methodology. One hundred patients suffering from chronic neck pain for at least six months (71 female-29 male) were evaluated in this study. A Visual Analog Scale was used to describe pain intensity. The Neck Disability Index (NDI) was used to evaluate disability level. To determine the quality of life of the subjects, the SF-36 survey was used.

Results. The mean age of the participants was 44.13±12.22 years. Mean of pain duration was 40.66±41.86 month. Mean pain intensity at rest 4.86±2.92, intensity of pain during activity 6.74±2.75, intensity of night pain 5.56±3.45. Mean NDI score was 42.20±18.29. The results of this study showed that the NDI scores were highly correlated with scores of the subscales of SF-36 ($p<0.01$). The NDI scores also showed a positive correlation with night pain, pain at rest, and pain during activity ($p<0.01$). However, NDI scores were not correlated with pain duration.

Conclusion. The results of this study indicate that increased disability level in patients with chronic neck pain leads to decreased quality of life.

Rezumat. Obiective: Acest studiu are ca scop determinarea relației dintre disabilitate, intensitatea durerii și calitatea vieții, la pacienții cu durere cronică lombară.

Metodologie. O sută de pacienți cu durere cronică lombară de cel puțin 6 luni (71 femei - 29 bărbați) au fost evaluați în acest studiu. Scala analogă vizuală s-a utilizat pentru a descrie intensitatea durerii. Neck Disability Index (NDI) s-a folosit pentru evaluarea nivelului disabilității iar pentru evaluarea calității vieții s-a folosit chestionarul SF-36.

Rezultate: Media de vârstă a participanților a fost 44.13±12.22 ani. Durata medie a intensității durerii a fost de 40.66±41.86 luni. Intensitatea medie a durerii în repaus a fost de 4.86±2.92, intensitatea durerii în timpul activității 6.74±2.75 iar intensitatea durerii pe perioada nopții 5.56±3.45. Scorul mediu pentru NDI a fost 42.20±18.29. Rezultatele acestui studiu au arătat că scorurile NDI au prezentat o corelație semnificativă cu scorurile subscalelor chestionarului SF-36 ($p<0.01$). Scorurile NDI au avut o corelație semnificativă cu durerea din perioada nopții, în repaus și în timpul activității ($p<0.01$). Oricum, scorurile NDI nu s-au corelat cu durata durerii.

Concluzii. Rezultatele acestui studiu indică faptul că un nivel crescut de disabilitate la pacienții cu durere cronică cervicală determină reducerea calității vieții.

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Introduction

Chronic neck pain is a common condition experienced by up to 70% of people some time during their lives. Neck pain is also one of the most frequent health problems in adults. [1,2] It is affected not only by an increase pain intensity, but also a decrease in quality of life (QOL) and disability level.[2,3,4] Chronic neck pain leads to dysfunction in the daily activities of the subjects due to effects on upper extremity functions. The impact of neck problems on quality of life is two-fold; they affect not only physical health but also the mental health. [5,6]

It has been reported in some studies that quality of life decrease in patients with chronic neck pain.[7,8] Other studies have revealed that there is a negative correlation between the intensity of pain and quality of life.⁹ Chronic pain also leads to anxiety, increased depressive symptoms and restraints in social activities. [9,10,11]

This study was conducted to determine the relationship between disability, pain intensity and quality of life in patients with chronic neck pain.

Methodology

A total of 100 patients with chronic neck pain sustained for at least six months (71 females/29 males) were evaluated at Pamukkale University, Medical Faculty and Neurosurgery Department between January-June 2011. They were aged between 20-60 years. Chronic neck pain (degenerative joint disease, disc herniation, tension, and nonspecific neck pain or strain), except for any disease diagnosed was not included in the study.

As well as demographic characteristics, patient education level, pain duration, alcohol consumption and smoking and exercise status were evaluated. In addition, Visual Pain Scale, Neck Disability Index and SF-36 Quality of Life Questionnaire were used, respectively.

Visual Analog Scale (VAS): Pain intensity was assessed using to the VAS. VAS consist of horizontal line 100 mm in length (0= No pain, 100= Most severe pain). The patient marks on the line the point that they feel represents their perception of their current state. [12] The severity of pain during rest, during activity pain and night pain was evaluated using the Visual Analog Scale (VAS).

Neck Disability Index (NDI): The Neck Disability Index was applied to detect disability status. The NDI consists of 10 items; pain intensity, personal care, lifting, sleeping, driving, recreation, headaches, concentration, reading and work. The 10 items, with six possible answers in each, are scored 0 (no activity limitations) to 5 (major activity limitations) and summed up to yield a total score. [13]

Quality of Life Scale (SF-36): Quality of life was assessed using to the SF-36. This generic rating scale has 36 items intended to reflect aspects of health from the perspective of the patient. The SF-36 assumes that 35 of its items can be grouped into eight scales: Physical functioning, Role limitation, Bodily Pain, social functioning, General mental health, Role limitation due to emotional problems, Energy level and General health perceptions. Total scores may range from 0 to 100. Each scales ranging from 0 (presence of all problems) to 100 (no problems at all) within a dimension. The SF-36 was adapted into Turkish by Koçyiyitet al with acceptable reliability and validity findings. [14]

Statistical analysis

Statistical analyses were performed using the Statistical package for the Social Sciences (SPSS version 16.0). Pearson's correlation analyses were used on the relationship between the Neck Disability Index, SF-36 and Pain. A level of $p < 0.05$ was considered significant.

Results

The mean age of patients was 44.13 ± 12.22 years. The Demographic Characteristics of the patients are shown in table 1. Characteristics of study groups, 75 % had primary education and 25 % were university graduates. Of the patients, 75 % reported no smoking, 95 % reported no alcohol consumption, and 82 % stated that they did not take regular exercise. Of the patients, 50 % were housewives, 35% were civil servants, 10 % were self-employed, and 5 % were students.

Mean pain duration was 40.89±41.67 months (Table 2) and mean working time was 10.44±1.98 hours (Table 1). Mean pain intensity at rest was 4.86 ±2.92, intensity of pain during activity was 6.74±2.75 and intensity of night pain was 5.56±3.45. Mean NDI score was 42.20±18.29 (Table 2). The results of quality of life (SF-36) are given in table 2.

The results of this study showed that the NDI scores were negatively correlated with scores of subscales (overall health status, physical function, social function, physical role function, emotional role function, pain, energy and mental health) of SF-36 ($p < 0.01$). (Table 3.) The NDI scores also showed a positive correlation with pain at rest, pain during activity and subscales (pain) of SF-36 (Table 3).

Table 1. Demographic Characteristics of Patients.

Variables	Min-Max	X±SD
Age (yr)	20.00-60.00	44.13±12.22
Height (cm)	150-195	164.67±0.08
Weight (kg)	47-100	71.92±13.87
BMI (Kg/m ²)	16.31-41.62	26.67±5.32
Work Duration (Day/Hours)	3-16	10.44±1.98
Gender	n	%
Woman	71	71
Male	29	29
Profession		
Housewife	50	50
Officer	35	35
Self- Employed	10	10
Student	5	5
Educational Level		
Primary	75	75
University graduates	25	25

Table 2. The mean values of Pain, SF-36 and Neck Disability Index

Variables	X±SD
Pain Intensity	
Pain Duration (Month)	40.89±41.67
During at rest	4.86 ±2.92
During activity	6.74±2.75
At night	5.56±3.45
SF-36	
Overall Health Status	41.07±18.66
Physical Function	56.98±22.63
Social Function	55.46±25.74
Physical Role Function	24.61±36.10
Emotional Role Function	41.04±45.02
Pain	40.39±21.73
Energy	43.95±20.03
Mental Health	49.40±20.20
Neck Disability Index (NDI)	42.20±18.29

Table 3. Relationship between the Neck Disability Index, SF-36 and Pain

Neck Disability Index(NDI)		
Variables	r	P
SF- 36		
Overall Health Status	-0.399	0.000
Physical Function	-0.471	0.000
Social Function	-0.489	0.000
Physical Role Function	-0.275	0.006
Emotional Role Function	-0.277	0.005
Pain	-0.204	0.042
Energy	-0.330	0.001
Mental Health	-0.288	0.004
Pain		
At Rest Pain	0.228	0.022
During Activity	0.302	0.002
At Night Pain	0.435	0.000
Pain Duration	0.090	0.372

*Pearson correlation analysis

Discussion

Neck pain is a frequent source of disability causing human suffering and affecting the well-being of individuals. Just as health is a state of complete physical, mental and social wellbeing, neck pain is associated with many health problems. Chronic neck pain has been shown to be associated with a decrease in quality of life in several studies. [7,8,9]

This study showed that the NDI scores also showed a positive correlation with intensity of night pain, pain at rest, and pain during activity ($p < 0.01$). NDI scores were negatively correlated with scores of subscales (overall health status, physical function, social function, physical role function, emotional role function, pain, energy and mental health) of SF-36 ($p < 0.01$). Earlier cross-sectional studies revealed that neck pain is shown to be associated with a decrease in HRQoL. [15,16,17,18] Lin et al. evaluated pain intensity, quality of life and psychological status in 52 patients with chronic neck pain. It was reported that most patients had moderate pain intensity and they had a decrease in quality of life level to below that of the healthy subjects.¹⁷ In our study, there was a negative correlation between the quality of life (Emotional Role Function) and NDI, the NDI also showed a positive correlation with pain characteristics. Lame et al. [10] investigated 1208 patients with chronic neck pain; they found that the quality of life level was decreased, particularly subscales of QOL (social function, mental health and overall health status). In our study, there were a positive correlation between the quality of life and pain intensity. Other studies reported that the intensity of pain was very higher in females. [1, 3, 10] We have found that 71% of their patients were female, and our results are similar to with literature.

Rezai et al. stated that the increased intensity of pain was associated with deterioration in overall health status in patients with neck pain. [18] According to Luo et al. level of quality of life decreased in 69% of patients and in addition to musculoskeletal pain was increased pain. [19] We found that the level of quality of life was lower in patients with chronic neck pain. Also there were a correlation between intensity of pain and quality of life ($p < 0.05$).

Chronic pain and physical dysfunctions increased disability levels. Yıldız et al. found that the higher the pain intensity that was obtained the higher the Neck Disability Index scores. [13] Herman and Reese.⁷ found that there was a highly positive relationship between the increase in pain severity and Neck Disability Index scores. Similar findings were reported by Chiu et al. [20] a positive relationship was also found between the pain intensity and the Neck Disability Index. Our study supported that when pain intensity was increasing the disability level was raised.

Conclusion

The conclusion of our study is that chronic neck pain negatively impacts on overall health status and the causes of dysfunctions due to an increase in intensity of pain and decreasing of level quality of life. We recommended that improving quality of life and preventing disability in chronic neck pain patients must be motivated for regular exercise.

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