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The Relationship Between Pain, Depression, and Job Satisfaction in Employees with Chronic Neck Pain

Kronik Boyun Ağrısı Olan Çalışanlarda Ağrı, Depresyon ve İş Tatmini İlişkisi

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The Relationship Between Pain, Depression, and Job Satisfaction in Employees with Chronic Neck Pain

ABSTRACT

Objective: The aim of this study is to investigate the relationships between factors such as occupation, pain, depression, and kinesiophobia with job satisfaction in employees with chronic neck pain.

Material and Method: This study was designed as a cross-sectional observational study. Individuals aged between 18 and 50 years, working in non-physically demanding occupations (such as nurses and secretaries), without neurological deficits and suffering from chronic neck pain lasting more than 3 months, were included in the study. The severity of neck pain was determined using the Visual Analog Scale (VAS). Disability was assessed using the Neck Disability Index (NDI). Depression symptoms were evaluated with the Beck Depression Inventory, and kinesiophobia was assessed using the Tampa Scale for Kinesiophobia (TSK). Job satisfaction was measured using the Minnesota Satisfaction Questionnaire. The data were analyzed using SAS 9.4 software.

Results: A total of 64 healthcare workers with chronic neck pain were included in the study. Among the participants, 33% were found to have low job satisfaction. In the group with low job satisfaction, pain severity (VAS: 7.6 vs. 6.5; *p=0.011*), disability level (NDI: 24.5 vs. 17.4; *p=0.013*), and depression level (BDI: 22.5 vs. 12.6; *p<0.001*) were significantly higher. Furthermore, among healthcare workers with chronic neck pain, higher levels of depression were associated with increased pain (VAS: *p=0.024*), disability (NDI: *p=0.007*), and kinesiophobia (TSK: *p=0.011*), as well as decreased job satisfaction (MSQ-Total: *p=0.004*, MSQ-Intrinsic: *p=0.003*, MSQ-Extrinsic: *p<0.001*).

Conclusion: In this study, a significant association was found between low job satisfaction and higher levels of pain, disability, and depression. Additionally, an increase in depression levels was observed to be associated with decreased job satisfaction and increased pain severity. These findings suggest that physical and psychological factors may be related to job satisfaction in healthcare workers with chronic neck pain.

Keywords: Healthcare workers, Job satisfaction, Neck pain.

ÖZET

Amaç: Bu çalışmanın amacı, kronik boyun ağrısı olan çalışanlarda ağrı, depresyon ve kinezyofobi gibi faktörlerin iş tatmini ile olan ilişkilerini incelemektir.

Gereç ve Yöntem: Bu çalışma, kesitsel gözlemsel bir çalışma olarak tasarlanmıştır. Çalışmaya, 18-50 yaş aralığında, fiziksel efor gerektirmeyen işlerde (örneğin hemşire, sekreter) çalışan, nörolojik defisiti bulunmayan ve 3 aydan uzun süredir devam eden kronik boyun ağrısı şikayeti olan hastalar dahil edilmiştir. Boyun ağrısının şiddeti Görsel Analog Skala (GAS) kullanılarak belirlenmiştir. Engellilik durumu Boyun Engellilik İndeksi (BEI) ile değerlendirilmiştir. Depresyon semptomları Beck Depresyon Envanteri ile değerlendirilmiş ve kinezyofobi, Tampa Kinezyofobi Ölçeği (TSÖ) ile ölçülmüştür. İş tatmini Minnesota İş Tatmini Anketi ile değerlendirilmiştir. Veriler SAS 9.4 yazılımı kullanılarak analiz edilmiştir.

Bulgular: Çalışmaya kronik boyun ağrısı olan 64 sağlık çalışanı dahil edilmiştir. Katılımcıların %33'ünde düşük iş tatmini saptanmıştır. Düşük iş tatminine sahip grupta ağrı düzeyi (VAS: 7.6 vs. 6.5; *p=0.011*), engellilik düzeyi (NDI: 24.5 vs. 17.4; *p=0.013*) ve depresyon düzeyi (BDI: 22.5 vs. 12.6; *p<0.001*) istatistiksel olarak anlamlı şekilde daha yüksek bulunmuştur. Ayrıca, kronik boyun ağrısı olan sağlık çalışanlarında depresyon düzeyi arttıkça ağrı (VAS: *p=0.024*), engellilik (NDI: *p=0.007*) ve kinezyofobi (TSK: *p=0.011*) düzeylerinde artış; iş tatmini düzeyinde ise azalma (MSQ-Total: *p=0.004*, MSQ-Intrinsic: *p=0.003*, MSQ-Extrinsic: *p<0.001*) gözlemlenmiştir.

Sonuç: Bu çalışmada, düşük iş tatmini ile daha yüksek düzeyde ağrı, engellilik ve depresyon arasında anlamlı bir ilişki saptanmıştır. Ayrıca, depresyon düzeyindeki artışın, iş tatmininde azalma ve ağrı düzeyinde artış ile ilişkili olduğu gözlemlenmiştir. Elde edilen bulgular, kronik boyun ağrısı olan sağlık çalışanlarında fiziksel ve psikolojik değişkenlerin iş tatmini ile ilişkili olabileceğini göstermektedir.

Anahtar Sözcükler: Boyun ağrısı, İş tatmini, Sağlık çalışanları.

Introduction

Pain is one of the most common reasons for seeking medical attention and is known to have physical, emotional, and cognitive dimensions, making it a complex biopsychosocial experience (1). Chronic pain can coexist with depression and secondarily lead to reduced activity, social, and economic problems for the individual (2). It is reported that the prevalence of depression in individuals with chronic pain is generally over 50% (3,4).

Non-specific neck-arm pain is defined as pain or discomfort originating from muscles, connective tissue, bursa, tendons, or joint capsules, and is used to describe symptoms in the upper quadrant associated with increased nerve mechanosensitive without accompanying neurological deficits. Occupational groups such as office workers, teachers, and healthcare workers are at risk for such pain. In one study, it was found that low back pain (71.6%) was the most common pain among healthcare workers, followed by shoulder pain (46.8%) and neck pain (42.2%) (5). Physical, psychological, and sociocultural factors related to the profession, as well as negative aspects of job satisfaction, can lead to a decrease in productivity and efficiency. Observational studies indicate that psychological risk factors such as depressive mood, a tendency towards somatization (generally the tendency to worry about common somatic symptoms), job dissatisfaction, and work stress are closely associated with musculoskeletal pain (6,7).

The relationship between pain and occupational stress may arise from stress increasing the sensitivity to and expression of pain. However, it should also be noted that pain may make individuals more prone to perceiving and expressing occupational stress. One study demonstrated that perceived stress has a small but significant effect on the development of musculoskeletal symptoms (8).

Previous studies have been conducted on job satisfaction in occupational groups that do not involve physical labor (such as teachers, nurses, and doctors). However, our study aims to investigate the relationship between factors such as chronic pain and depression and job satisfaction among employees with chronic neck pain.

Material and Method

Selection and Description of Participants: This study was designed as a cross-sectional observational study. The participants were selected from patients aged 18–50 years who presented to the Rheumatology (Physical Medicine and Rehabilitation) outpatient clinic of Antalya Training and Research Hospital in Antalya, Türkiye, between January 2023 and January 2024. Employees with chronic neck pain lasting more than 3 months were included in the study. In accordance with the literature, participants were selected to represent non-specific neck pain, characterized by the absence of identifiable structural, surgical, or neurological causes. Participants were from non-physical labor occupations (secretaries, nurses). The participants' prior medical histories and imaging reports were reviewed using the national electronic health record system (e-Nabız) and hospital databases. Individuals with a history of surgery on the head/neck region, cervical disc disease, or cervical disc pathology identified on MRI were excluded. Additionally, those diagnosed with myelopathy, fractures, infections, dystonia, tumors, inflammatory diseases, fibromyalgia, or osteoporosis were not included in the study. Patients with neurological deficits or clinical signs of radiculopathy were also excluded.

Data sources/measurement: After collecting demographic information such as age, gender, and occupation, the severity of neck pain was assessed using the Visual Analog Scale (VAS). Disability was evaluated using the Neck Disability Index (NDI). Symptoms of depression were assessed using the Beck Depression Inventory (BDI), and kinesiophobia was evaluated using the Tampa Scale of Kinesiophobia (TSK). Job satisfaction was measured using the Minnesota Satisfaction Questionnaire (MSQ)

Visual Analog Scale (VAS): The meaning of the numbers placed from zero to ten on a 10 cm line. Zero indicates no pain, ten indicates unbearable pain, and five indicates moderate pain. Following this explanation, patients were asked to indicate their chronic neck pain on a 10 cm line (9,10).

Neck Disability Index (NDI): Various scales have been developed for the evaluation of self-rated disability in neck pain patients. The Neck Disability Index (NDI) (11) is the first such scale published. It

was modified from the Oswestry Low Back Pain Disability Questionnaire (12) by Vernon and Mior (11). The NDI is the most widely used scale for evaluating neck pain related disability throughout the World (13). The Turkish validity and reliability of NDI have been confirmed by Kesiktaş et al. (14). The total score ranges from 0 to 50, with higher scores indicating higher disability.

Beck Depression Inventory (BDI): The scale is a psychological assessment questionnaire consisting of a total of 21 questions, evaluated by summing the scores between 0 and 3 obtained from each answer. In accordance with the corresponding score ranges, the scale is evaluated as follows: minimal depression between 1-9, mild depression between 10-16, moderate depression between 17-29, and severe depression between 30-63. The Turkish validity and reliability study of the scale were conducted by Hisli (15).

Tampa Scale of Kinesiophobia (TSK): Assessment of Kinesiophobia was conducted using the Tampa Scale for Kinesiophobia (TSK) in patients. The original version of the Tampa Scale for Kinesiophobia (TSK) was developed by Miller, Kopri, and Todd in 1991 but was not published. Vlaeyen and colleagues republished the original scale consisting of 17 questions with permission from the developers in 1995. TSK is a 17-item scale developed to measure fear of movement/reinjury. The scale includes parameters related to work-related activities, injury/reinjury, and fear-avoidance (16,17). With Turkish validity and reliability established, individuals receive a total score ranging from 17 to 68 on this scale (18). The higher the score obtained on the scale, the higher the degree of kinesiophobia experienced by the individual.

The Minnesota Satisfaction Questionnaire-short form (MSQ-short form): The MSQ-short form is a 20-item questionnaire consisting of two dimensions: intrinsic job satisfaction and extrinsic job satisfaction. Each item is rated on a 5-point Likert scale, ranging from 1 (very dissatisfied) to 5 (very satisfied). Intrinsic job satisfaction comprises 12 items, while extrinsic job satisfaction comprises eight items. The neutral satisfaction score is 3, based on the sum of the score (19). A final score higher than 3 indicates high job satisfaction, while a score smaller than 3 indicates low job satisfaction. The Turkish version of MSQ-short form has been validated and shown to be reliable (20).

The evaluation of job satisfaction includes total job satisfaction, intrinsic job satisfaction, and extrinsic job satisfaction. Intrinsic job satisfaction focuses on factors related to the nature of the job itself, such as the job content, responsibility, and opportunities for advancement and promotion. Extrinsic job satisfaction, on the other hand, primarily involves factors external to the job, such as company policies and management, relationships with coworkers and supervisors, working conditions, and salary.

This project received approval from the Ethics Committee of Antalya Training and Research Hospital on January 26, 2023 (protocol number 2/10). Informed consent was obtained from all individual participants included in the study. In accordance with the principles of the Helsinki Declaration, this research was conducted with full adherence to ethical standards and the protection of human rights. All aspects of the study involving human participants were carried out in strict compliance with the Helsinki Declaration's guidelines and regulations.

Statistical Analysis

The normality of the data was assessed using visual methods (histograms and Q–Q plots) as well as the Kolmogorov–Smirnov test. Although certain variables showed minor deviations from normal distribution, descriptive statistics were presented as mean ± standard deviation throughout the manuscript to ensure consistency and to facilitate clinical interpretation. Accordingly, parametric summaries were preferred. For group comparisons, non-parametric tests (Kruskal–Wallis) were used in cases where assumptions of normality were not sufficiently met. Categorical variables were compared using the Chi-square test. A p-value of less than 0.05 *($p<0.05$)* was considered statistically significant.

Results

Patients General Characteristics

A total of 64 patients were included in the study, consisting of 47 (73.4%) females and 17 (26.6%) males, with a mean age of 34.6 years. The occupational distribution of the patients in the study was 31 nurses and 33 medical secretaries. Among the 64 patients,

the mean pain (VAS) score was 6.9 (range = 4–10). Patients average scores for total job satisfaction and intrinsic job satisfaction exceeded 3, whereas the average score for extrinsic job satisfaction was below 3. Among the patients, 34% exhibited a severe Neck Disability Index (NDI) score, while 27% showed mild disability. Additionally, 36% of the patients had a mild Beck Depression Inventory (BDI) score, and 11% exhibited severe depression. The average score for the Tampa Scale of Kinesiophobia (TSK) was 42. The demographic characteristics of the study population and the evaluation results are summarized in Table I.

Table I. General characteristics of the study population

	Total (N=64)
Gender, n (%)	
Female	47 (73.4%)
Male	17 (26.6%)
Profession, n (%)	
Nurse	31 (48.4%)
Medical secretary	33 (51.6%)
NDI, n (%)	
Mild	17 (26.6%)
Moderate	21 (32.8%)
Severe	22 (34.4%)
BDI, n (%)	
Minimal	17 (26.6%)
Mild	23 (35.9%)
Moderate	17 (26.6%)
Severe	7 (10.9%)
Age (year)	
Mean (SD)	34.6 (9.25)
VAS	
Mean (SD)	6.9 (1.45)
TSK	
Mean (SD)	42.3 (9.21)
MSQ-Total	
Mean (SD)	3.2 (0.87)
MSQ-Intrinsic	
Mean (SD)	3.4 (0.88)
MSQ-Extrinsic	
Mean (SD)	2.9 (1.03)

NDI: Neck Disability Index, BDI: Beck Depression Inventory, VAS: Visual Analog Scale,TSK: Tampa Scale for Kinesiophobia, MSQ: Minnesota Satisfaction Questionnaire

Gender-specific Patient Characteristics

Among female patients, there were 26 nurses and 21 medical secretaries, while among male patients, there were 5 nurses and 12 medical secretaries. The average pain (VAS) score was higher in female patients (7.3) compared to males (5.8), and this difference was statistically significant (*p=0.0009*). Scores for depression status, disability, and kinesiophobia (BDI, NDI, TSK) were higher in females compared to males, and these differences were statistically significant (*p=0.0147, p=0.0016, p=0.0158*) In the evaluation of the Minnesota Job Satisfaction Scale, total, extrinsic, and intrinsic job satisfaction scores were lower in females compared to males, but only intrinsic job satisfaction showed a statistically significant difference *(p=0.0306*), with females reporting significantly lower intrinsic satisfaction than males. The assessment results of patients according to gender are shown in Table II.

Table II. Gender-specific Patient Characteristics:

	Gender		
	Female (N=47)	**Male (N=17)**	***p*-value**
Profession, n (%)			0.067[1]
Nurse	26 (55.3%)	5 (29.4%)	
Medical secretary	21 (44.7%)	12 (70.6%)	
NDI, n (%)			0.001[1]
Mild	7 (14.9%)	10 (58.8%)	
Moderate	18 (38.3%)	3 (17.6%)	
Severe	20 (42.6%)	2 (11.8%)	
BDI, n (%)			0.014[1]
Minimal	8 (17.0%)	9 (52.9%)	
Mild	17 (36.2%)	6 (35.3%)	
Moderate	15 (31.9%)	2 (11.8%)	
Severe	7 (14.9%)	0 (0.0%)	
Age (year)			0.493[2]
Mean (SD)	35.1 (9.60)	33.1 (8.30)	
VAS			0.000[2]
Mean (SD)	7.3 (1.29)	5.8 (1.38)	
TSK			0.015[2]
Mean (SD)	44.0 (8.35)	37.5 (10.06)	
MSQ-Total			0.097[2]
Mean (SD)	3.1 (0.90)	3.6 (0.65)	
MSQ-Intrinsic			0.030[2]
Mean (SD)	3.2 (0.92)	3.8 (0.57)	
MSQ-Extrinsic			0.241[2]
Mean (SD)	2.8 (1.04)	3.2 (0.97)	

[1]Chi-Square p-value; [2]Kruskal-Wallis p-value NDI: Neck Disability Index BDI: Beck Depression Inventory VAS: Visual Analog Scale TSK: Tampa Scale for Kinesiophobia MSQ: Minnesota Satisfaction Questionnaire

Occupational Group Characteristics of Patients

By occupation group, patient characteristics were assessed, revealing that the secretary group was younger in age (32) compared to the nurse group (37). In the nurse patient group, female gender was dominant (n:26), while in the secretary patient group, male gender was dominant (n:21). No significant differences were found between the two professions in terms of disability, pain scores, kinesiophobia, and job satisfaction (NDI, VAS, TSK, MSQ). However, in the nurse group, BDI depression scores were significantly higher compared to the secretary group (*p=0.0481*). Occupational Group Characteristics of Patients are Presented in Table III.

Table III. Occupational Group Characteristics of Patients

	Nurse (N=31)	Medical secretary (N=33)	*p*-value
Gender, n (%)			0.067[1]
Female	26 (83.9%)	21 (63.6%)	
Male	5 (16.1%)	12 (36.4%)	
BDI			0.0482
Mean (SD)	18.5 (10.71)	13.4 (8.94)	
Age (year)			0.015[2]
Mean (SD)	37.4 (9.57)	32.0 (8.24)	
VAS			0.592[2]
Mean (SD)	6.8 (1.25)	6.9 (1.64)	
MSQ-Total			0.332[2]
Mean (SD)	3.1 (0.84)	3.3 (0.90)	

[1]Chi-Square p-value; [2]Kruskal-Wallis p-value NDI: Neck Disability Index BDI: Beck Depression Inventory VAS: Visual Analog Scale TSK: Tampa Scale for Kinesiophobia MSQ: Minnesota Satisfaction Questionnaire

The Relationship Between the Minnesota Satisfaction Questionnaire and Other Parameters

Minnesota total job satisfaction was high (3 and above) in 43 people, while it was low in 21 people. The pain, disability, and depression scale scores (VAS, NDI, and BDI) of those with low total job satisfaction were statistically significantly higher than those with high total job satisfaction (*p=0.0112, p=0.0130, p=0.0004*). However, no significant relationship was found between total job satisfaction and kinesiophobia (TAMPA) scores.

In individuals with low Minnesota intrinsic job satisfaction (n:14), the BDI was significantly higher(*p<0.001*). No significant relationship was found between disability, pain, and kinesiophobia (NDI, VAS, TAMPA) scores and intrinsic job satisfaction. In individuals with low Minnesota extrinsic job satisfaction (n:28), the scores for pain, depressive state, and kinesiophobia (VAS, BDI, TAMPA) were significantly higher compared to those with high job satisfaction (*p=0.0627, p=0.0001, p=0.0426*) However, no significant relationship was found between disability (NDI) scores and extrinsic job satisfaction. (Table IV)

Table IV. The Relationship Between the Minnesota Satisfaction Questionnaire and Other Parameters

	MSQ-Total		
	≥3 (N=43)	<3 (N=21)	*p*-value
VAS			0.011[2]
Mean (SD)	6.5 (1.47)	7.6 (1.16)	
NDI			0.013[2]
Mean (SD)	17.4 (10.37)	24.5 (8.28)	
BDI			0.000[2]
Mean (SD)	12.6 (7.71)	22.5 (11.22)	
TSK			0.061[2]
Mean (SD)	41.0 (9.15)	44.8 (9.01)	
	MSQ-Intrinsic ≥ 3 **(N=50)**	< 3 **(N=14)**	
VAS			0.124[2]
Mean (SD)	6.7 (1.47)	7.5 (1.22)	
NDI			0.341[2]
Mean (SD)	19.0 (10.48)	22.4 (9.14)	
BDI			<.000[2]
Mean (SD)	12.8 (8.17)	26.6 (8.98)	
TSK			0.092[2]
Mean (SD)	41.2 (9.78)	45.9 (5.64)	
	MSQ-Extrinsic ≥3 **(N=36)**	<3 **(N=28)**	
VAS			0.062[2]
Mean (SD)	6.6 (1.42)	7.3 (1.43)	
NDI			0.070[2]
Mean (SD)	17.6 (10.96)	22.5 (8.65)	
BDI			0.000[2]
Mean (SD)	11.6 (7.78)	21.3 (10.22)	
TSK			0.042[2]
Mean (SD)	40.0 (10.40)	45.1 (6.50)	

[1]Chi-Square p-value; [2]Kruskal-Wallis p-value, NDI: Neck Disability Index BDI: Beck Depression Inventory VAS: Visual Analog Scale TSK: Tampa Scale for Kinesiophobia MSQ: Minnesota Satisfaction Questionnaire

The Relationship Between the Beck Depression Inventory and Other Parameters

The Beck Depression Inventory was divided into four categories: minimal, mild, moderate, and severe. As the severity of BDI increased, statistically significant increases were observed in patients' pain, disability, and kinesiophobia scores (VAS, NDI, TSK), particularly between the severe and minimal groups. Conversely, job satisfaction scores (MSQ-total, intrinsic, and extrinsic) significantly decreased, with the lowest scores seen in the severe group. Specifically, pain intensity scores (VAS) significantly increased across BDI categories, with the highest scores observed in patients with severe depression (*p=0.024*) (Table V)

Table V. The Relationship Between the Beck Depression Inventory and Other Parameters

	BDI				
	Minimal (N=17)	Mild (N=23)	Moderate (N=17)	Severe (N=7)	*p*-value
Gender, n (%)					0.014[1]
Female	8 (47.1%)	17 (73.9%)	15 (88.2%)	7 (100.0%)	
Male	9 (52.9%)	6 (26.1%)	2 (11.8%)	0 (0.0%)	
Profession, n (%)					0.305[1]
Nurse	6 (35.3%)	10 (43.5%)	10 (58.8%)	5 (71.4%)	
Medical secretary	11 (64.7%)	13 (56.5%)	7 (41.2%)	2 (28.6%)	
VAS					0.024[2]
Mean (SD)	5.9 (1.60)	7.0 (1.40)	7.4 (1.12)	7.6 (0.98)	
NDI					0.007[2]
Mean (SD)	13.8 (10.68)	19.2 (9.49)	22.5 (8.84)	29.1 (5.55)	
TSK					0.011[2]
Mean (SD)	36.2 (12.91)	43.3 (6.66)	43.6 (4.33)	50.3 (6.60)	
MSQ-Total					0.004[2]
Mean (SD)	3.7 (0.66)	3.4 (0.73)	2.9 (0.77)	2.2 (1.04)	
MSQ-Intrinsic					0.003[2]
Mean (SD)	3.9 (0.57)	3.5 (0.77)	3.1 (0.83)	2.5 (1.07)	
MSQ-Extrinsic					0.000[2]
Mean (SD)	3.5 (0.74)	3.1 (0.92)	2.5 (0.97)	1.8 (0.87)	

[1]Chi-Square p-value; [2]Kruskal-Wallis p-value; NDI: Neck Disability Index BDI: Beck Depression Inventory VAS: Visual Analog Scale TSK: Tampa Scale for Kinesiophobia MSQ: Minnesota Satisfaction Questionnaire

Discussion

In this study, we found that lower job satisfaction among healthcare workers with chronic neck pain was significantly associated with higher levels of pain, disability, depression, and kinesiophobia. Notably, pain severity was not only higher in those with lower job satisfaction but also increased in parallel with depression severity. These findings highlight the bidirectional impact of pain on both psychological well-being and occupational satisfaction. The results underscore the complex interplay between physical symptoms and psychosocial factors in employees with chronic neck pain.

Pain is an unpleasant sensation that negatively affects individuals' daily functioning and quality of life, with responses varying between individuals depending on pain tolerance and acceptance (21). In a study involving individuals with back and neck pain, it was found that their physical functioning was more impaired than that of healthy controls, and they experienced greater limitations in work and daily activities (22). Similarly, in a study on job satisfaction among healthcare workers, the rate of dissatisfaction was reported as 35%, close to the 33% rate found in our study (23). In our study, workers with lower job satisfaction had significantly higher levels of pain, disability, and depression, indicating a multifaceted interaction between physical and psychological well-being in the workplace.

In our study, the professional groups consisted of nurses and medical secretaries, whereas the referenced study involved research assistant physicians working at a university hospital (23). The mean age of the participants in our study was 35, slightly higher than the 30 years reported in the physician group. Previous research has suggested that younger age and shorter professional experience may be associated with lower job satisfaction (24). While we did not collect data on years of employment, it is noteworthy that medical secretaries and nurses typically enter the workforce at an earlier age compared to physicians, due to shorter educational training. This difference in career trajectories may partly account for variation in job satisfaction across occupational groups.

In another study conducted with nurses and physicians, the average job satisfaction score of physicians was significantly higher compared to nurses (25). In the same study, significant differences were found between male and female employees in terms of total job satisfaction as well as intrinsic and extrinsic job satisfaction, with female employees

having lower job satisfaction (25). In our study, 73.4% of the participants were female, and there was no difference in the average age between genders. While no differences were found between men and women in terms of total job satisfaction and extrinsic satisfaction, intrinsic satisfaction was significantly lower in women. Additionally, pain intensity, disability, kinesiophobia, and depression were found to be significantly higher in women compared to men. A recent systematic review and meta-analysis involving over 347,000 individuals with chronic pain reported that approximately 40% experienced clinically significant symptoms of depression and anxiety, with notably higher prevalence among women and younger individuals. Similarly, in our study, depressive symptoms were significantly more common in female participants, who also reported higher levels of pain intensity compared to males. These findings support the growing evidence of a gender-related vulnerability to psychological distress in individuals with chronic pain (26).

In patients with chronic pain, there is often a reluctance to exercise and kinesiophobia due to the fear of exacerbating the pain (27). In a study conducted with men and women suffering from chronic low back pain, similar to our study, disability and kinesiophobia were found to be higher in women compared to men. Additionally, the same study found that pain intensity was also higher in women (28). Although our study did not statistically evaluate the relationship between pain intensity and kinesiophobia, previous studies have reported a positive association between these two variables. For instance, in a study conducted on sedentary individuals with and without chronic pain, kinesiophobia was found to be more common in those with chronic pain (28).

Previous studies have shown that chronic low back and neck pain are closely associated with depression, with depression being more common in patients with chronic pain compared to the normal population (29). While the prevalence of depression in the general population is 5-8%, this rate is between 30-54% in patients with chronic pain (30). In our study, consistent with the literature, a positive relationship was found between pain intensity and depression. It was also found that as the severity of depression increased in patients, both disability and job dissatisfaction increased. In our study, it was determined that the increase in the severity of depression not only reduced total job satisfaction but also negatively affected the subgroups of job satisfaction, such as intrinsic and extrinsic job satisfaction. There are also studies reporting a positive correlation between the severity of depression and the duration of pain (31). In our study, patients with a pain duration of 3 months or more were included, but the exact duration was not specified; therefore, the relationship between depression and pain duration could not be evaluated.

In a study conducted between medical secretaries and administrative staff working in hospitals, it was found that the BDI scores were low in medical secretaries, similar to those of administrative staff who do not have direct contact with patients (32). In our study, total BDI scores in the patient group were significantly lower in medical secretaries compared to the nurse patient group. Additionally, while the number of nurses was higher in the female patient group (55.3%), the number of medical secretaries was higher in the male patient group (70.6%). Therefore, it is considered that the difference in the severity of depression between female and male healthcare workers in our study may be related not only to gender but also to the profession. It is thought that besides encountering patients, the communication of medical secretaries with patients on matters other than diagnosis/treatment and clinical follow-up, as required by their job description, may be a factor contributing to this difference.

A study conducted in Nigeria among 355 academic staff examined the relationship between job satisfaction and musculoskeletal problems. The findings revealed that as the severity and frequency of musculoskeletal symptoms—such as back pain, neck pain, and upper limb discomfort—increased, overall job satisfaction decreased. The study emphasizes the negative impact of musculoskeletal complaints on employees' perceived satisfaction with their work and highlights the importance of addressing physical health in occupational well-being strategies. Similarly, in our study, we found that increased neck pain severity was associated with reduced job satisfaction (33).

The main limitations of this study include the absence of data on factors such as work duration, educational background, marital status, number of children, and shift duration, which are commonly considered in job satisfaction research. The study focused on healthcare workers with chronic neck pain, specifically secretaries and nurses in Antalya, Turkey, limiting the generalizability of findings to other regions or healthcare worker populations. Moreover, although both groups were selected from non-physical labor occupations, the job demands, responsibilities, and work-related stress levels of secretaries and nurses may differ considerably, which may have influenced the study variables and further limited generalizability.

Additionally, the lack of a control group of healthcare workers without chronic pain restricts the ability to establish causal relationships between pain, depression, and job satisfaction. Future research with more diverse samples and control groups is recommended to enhance the generalizability and provide clearer insights into these dynamics.

Conclusion

This study highlights the associations between depression, pain, and disability and their potential influence on job satisfaction among healthcare workers with chronic neck pain. The findings suggest that lower job satisfaction is related to higher levels of pain, disability, and depression. Furthermore, greater severity of depression appears to be associated with reduced job satisfaction and increased pain intensity. These observations underline the importance of addressing pain and depressive symptoms in this population, which may contribute to improving job satisfaction. Further research, particularly involving control groups, is recommended to better understand the interplay between chronic pain, job satisfaction, and depression. Such studies could help clarify causal relationships and support the development of strategies aimed at improving the overall well-being of healthcare workers.

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