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Assessment of Prevalence of Neck Pain and Related Factors in Nurses Working in a University Hospital

Bir Üniversite Hastanesinde Çalışan Hemşirelerde Boyun Ağrısı Prevalansı ve İlişkili Faktörlerin İncelenmesi

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Abstract

Objective: The aim of this study was to assess the presence of neck pain, which is one of the most common musculoskeletal disorders in nurses, in terms of different work environments, and also to assess the possible relationships of ergonomic, demographic, and psychological factors on their neck pain.
Materials and Methods: Female nurses from our university hospital that worked in outpatient clinics, wards and intensive care units were included in this cross-sectional study. It was carried out between February and July 2020 in different departments of our university. Patient demographics as well as duration and characteristics of neck pain, Short form-36 (SF-36) questionnaire scores were recorded.
Results: A statistically significant relationship was found between units that the subjects worked in and emergence of neck pain due to the presence of triggering factors such as computer use, heavy lifting and the presence of neck pain for the last month ($p<0.05$). The presence of neck pain in the previous month was found to be statistically correlated with presence of comorbid diseases ($p<0.05$), while no statistically significant relationship was found between fatigue, stress, education level, marital status and presence of neck pain ($p<0.05$).
Conclusion: Musculoskeletal pain is reported to be common in healthcare workers. Nurses are also known to be among the occupational groups at serious risk for painful conditions. Lack of proper working conditions and lifestyle are among the causes of neck pain in nurses. In our study, a statistically significant relationship was found between neck pain and conditions that are not suitable for ergonomics such as prolonged computer exposure and heavy lifting.
Keywords: Computer usage, neck pain, nurses, occupational disease, stress

Öz

Amaç: Bu çalışmanın amacı, hemşirelerde sık rastlanan kas iskelet sistemi rahatsızlıklarından biri olan boyun ağrısının farklı çalışma ortamları açısından karşılaştırılması, ergonomik, demografik ve psikolojik faktörlerin boyun ağrısı üzerindeki olası ilişkilerini araştırmaktır.
Gereç ve Yöntem: Bu kesitsel çalışmaya, üniversite hastanemizin poliklinik, servis ve yoğun bakım ünitelerinde görev yapan kadın hemşireler dahil edilmiştir. Şubat ve Temmuz 2020 arasında hastanemizin farklı birimlerinde yürütülmüş olan çalışma kapsamında, katılımcıların demografik özellikleri, boyun ağrısının süresi ve özelliklerine ek olarak Kısa form-36 anketi skorları kaydedilmiştir.
Bulgular: Araştırma sonunda, çalıştığı birim ile ve bilgisayar kullanımı, ağırlık kaldırma gibi tetikleyici faktörlerin varlığı ile boyun ağrısının ortaya çıkması ile son bir aydır boyun ağrısı mevcudiyeti arasında istatistiksel olarak anlamlı ilişki saptanmıştır ($p<0,05$). Ayrıca komorbid hastalıklar ile boyun ağrısı varlığı arasında anlamlı bir korelasyon saptanmıştır ($p<0,05$). Ancak yorgunluk, stres, eğitim düzeyi, medeni durum ile son bir aydır olan boyun ağrısı mevcudiyeti arasında istatistiksel olarak anlamlı bir ilişki saptanmamıştır ($p>0,05$).
Sonuç: Kas iskelet sistemi ağrılarına sağlık çalışanlarında sık rastlanmaktadır. Hemşirelerin ağrılı durumlara yatkın bir meslek grubunda oldukları bilinmektedir. Hemşirelerdeki boyun ağrısı nedenleri arasında uygun çalışma şartlarının oluşturulmaması ve yaşam şartları rol oynamaktadır. Çalışmamızda, uzun süreli bilgisayar kullanımı ve ağır kaldırma gibi uygunsuz ergonomik durumlar boyun ağrısı ile ilişkili bulunmuştur.
Anahtar kelimeler: Bilgisayar kullanımı, boyun ağrısı, hemşireler, meslek hastalığı, stres

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Introduction

The intricate and highly mobile cervical spine is continually subjected to mechanical stress that predisposes the spinal units to degenerative changes. There are three common symptom complexes associated with the degenerative process of the cervical spine. These include cervical axial pain, radiculopathy, and myelopathy (1,2). These symptoms and findings may occur together or individually. Axial pain usually starts in midlife (3). Spinal nerve root pathology and radicular syndromes may result from an acutely disturbing disc injury or from a more slowly developing and degenerative neural foraminal stenosis (4,5). Myelopathic symptoms usually start after spinal cord is injured due to spinal stenosis (6-8).

It has been reported that more than 80% of individuals experience neck pain and related disorders throughout their lifetimes, and 30-50% of the general adult population report neck pain annually (9,10). The prognosis of neck pain is favorable in most patients; however, 23% of individuals recovering from an episode of neck pain will experience another episode afterward (11). For most individuals, neck pain is a complicated biopsychosocial disorder with problematic psychosocial and physical symptoms. Neck pain is also associated with decreased health-related quality of life, decreased work productivity, restrictions in daily activities, and increased health care costs (10,12-14).

Nurses often exhibit non-ergonomic behaviors in their daily work. During work activities, they repeatedly take the unergonomic body postures, use the wrong grip associated with the lack of favorable conditions for optimal performance of work activities. Due to the large number of patients in the wards, nurses often try to access the patient bed from different sides and cannot freely access the space around the patient bed (15). In this respect, two main factors of postural control are important in a nurse's work and this significantly affects musculoskeletal overload from a biomechanical point of view. The first is the prolonged standing position that strains the neck spine muscles, which destabilizes the shoulder girdle and causes neck pain, movement restrictions, pain radiating to the upper extremities and even dizziness and visual disturbances (16,17). The second stereotype is the position of extreme trunk hyperflexion, which is an extremely overloaded position, especially when lifting and moving the patient, causing local lumbar and sacral pain or pain radiating to the lower extremity (18,19).

Until now, many studies have pointed out the unhealthy aspects of nurses' lifestyles (20-22). Among these reasons; nurses working in a certain service (23,24), working in shifts (25-27), inappropriate diet and eating habits (28,29), sedentary lifestyle and less physical activity (30,31), exposure to continuous occupational stress (32-35) and overworking and showing symptoms of burnout syndrome (36,37) and they often experience musculoskeletal pain caused by not following ergonomic guidelines (38,39).

In light of this data, the object of this study was to assess the presence of neck pain, which is one of the most common musculoskeletal disorders in healthcare workers, in terms of different working conditions, and to investigate the possible relationships of demographic and aggravating factors on neck pain.

Materials and Methods

Ethics committee approval was obtained with the decision of Ege University Ethics Committee dated 22.01.2020 and numbered 20-1.1T/46. Female nurses working in outpatient clinics, wards and intensive care units of our university hospital were included in this study. The interviews were carried out between February and July 2020 on nurses working in physical medicine and rehabilitation, gynecology and obstetrics, neurosurgery, ear nose and throat diseases, neurology, internal medicine, anesthesiology, pulmonology departments of our university hospital were included.

Inclusion Criteria

- Being a female nurse working at university hospital,
- Being working in the same unit for the past year.

Exclusion Criteria From the Study

- Diagnosis of a rheumatological, neurological, metabolic disease that may cause pain,
- History of cervical vertebral fracture,
- Cancer history,

The unit in which he worked has changed in less than 1 year.

Evaluation Parameters Used in the Study

Short form-36 (SF-36): The SF-36 questionnaire is a general health questionnaire that is a validated and reliable inventory aiming to test mental and physical health in the previous 12 months (39). Three different sub-scores were used in the present study from the SF-36 questionnaire: mental health score, physical health score and general health score. An individual's highest score on the SF-36 is 100 and higher scores indicate better health (40). Turkish validity and reliability were performed by Kocyigit in 1999 (41).

Visual pain scale (VAS): The VAS is a scale that has many different versions that can be used for all types of pain and is also recommended to be used in the determination of disease activity by the American Rheumatology Association (42). The VAS simply consists of a horizontal straight line of 100 mm, mostly from left to right when evaluating various characteristics such as pain level, level of health; graded from good to bad (43). In some studies, right-to-left, vertical or pictorial versions were also used, but it was concluded that the direction of the line axis did not significantly affect the measurement (44).

Evaluation of Patients

Nurses working in the previously mentioned units of university hospital were informed about the study, written consents were obtained from those who agreed to participate in the study and were evaluated with VAS and SF-36 by the relevant research assistant who carried out the study.

The sociodemographic and clinical characteristics of all patients, age, marital status, education and employment status, comorbidities and medical treatment they received were questioned and recorded in the case evaluation form.

Statistical Analysis

The sample size was calculated by power analysis and was determined as 124. Stratified sampling was done, Shapiro-Wilk test was applied to examine whether the data were normally distributed. Since the data were not normally distributed, non-parametric tests were used. Chi-square test was used to analyze the distribution of categorical data. Group ratio distribution of numerical data was evaluated with Mann-Whitney U test. The statistical significance limit was accepted as <0.05.

Results

The mean age of the nurses included in our study was 36.85 (+/-8.67), the mean age of the nurses who had neck pain in the last month was 36.15 (+/-7.9) and those who did not have neck pain in the last month. The mean age was found to be 37.83 (+/-9.65).

Neck Pain Findings of the Participants

While 72 (58.1%) of the participants had neck pain for the last month, 52 (41.9%) of the participants did not have neck pain.

Demographic Information of the Participants

When the distribution of the participants according to the units they work in is examined; 10 (8.1%) in the physical medicine and rehabilitation department, 14 (11.3%) in the obstetrics and gynecology department, 12 (9.7%) in the neurosurgery department, 9 (7%) in the ear nose and throat diseases department, 6 (4.8%) in the neurology department, 29 (23.4%) in the internal medicine department, 32 (25.8%) in the anesthesia and reanimation department and 12 (9.7%) in the pulmonary diseases department. The number of participants who kept the night watch was 89 (71%), and the number of participants who did not keep the night watch was 35 (29%). Neck pain started in 82 of the participants (66.1%) after they started their profession and in 42 (33.9%) neck pain started before they started their profession. The demographic and disease characteristics of the participants are summarized in Table 1.

Correlations

In our study, a significant negative correlation was found between age, working time in the unit, working time in the profession and the physical function subscale of the SF-36 scale ($p<0.05$). A negative correlation was found between the amount of weekly working hours and SF-36 physical role, SF-36 emotional role, SF-36 mental health, SF-36 social function, and SF-36 physical pain ($p<0.05$). A significant negative correlation was found between the time spent in front of the computer for one day and SF-36 physical function ($p<0.05$). There is a statistically significant relationship between the current pain duration and

Table 1. Demographic and disease characteristic of subjects

Age, median (minimum-maximum)	
With neck pain	36.15 (23-56)
Without neck pain	37.83 (25-62)
Marital status, n (%)	
Married	80 (64.5%)
Single	44 (35.5%)
Educational status, n (%)	
High school	1 (0.8%)
University	113 (91.1%)
Master's	8 (6.5%)
Doctorate	2 (1.6%)
Department n (%)	
Physical medicine and rehabilitation	10 (8.1%)
Obstetrics and gynecology	14 (11.3%)
Ear nose and throat	9 (7.3%)
Neurology	6 (4.8%)
Internal medicine	29 (23.4%)
Anesthesiology	32 (25.8%)
Pulmonology	12 (9.7%)
Neurosurgery	12 (9.7%)
Working duration in unit (years, mean)	
With neck pain	10.2
Without neck pain	10.9
Working duration in profession (years, mean)	
With neck pain	13.167
Without neck pain	15.269
Works in night shifts, n (%)	
Yes	89 (71%)
No	35 (29%)
Weekly working hours, mean	
With neck pain	42.51
Without neck pain	41.52
Exposure to stress at work, n (%)	
Low	7 (5.7%)
Moderate	71 (58.2%)
High	44 (36.1%)
Neck pain in the last month, n (%)	
Yes	72 (58.1%)
No	52 (41.9%)
Neck pain history, n (%)	
Yes	67 (54%)
No	57 (46%)
Neck pain started after current employment, n (%)	
Yes	82 (66.1%)
No	42 (33.9%)

the level of neck pain according to VAS (p<0.05). Different from the current pain duration, an additional negative correlation was found between neck pain level and SF-36 health change (p<0.05). The correlation analysis performed to investigate the relationship between the evaluated parameters is summarized in Table 2.

Table 1. Continued

Initiating factor, n (%)	
Heavy object lifting	39 (31.5%)
Computer usage	46 (37.1%)
Stress/sadness	50 (40.3%)
Other	21 (16.9%)
Feeling tired, n (%)	
Yes	114 (91.9%)
No	10 (8.1%)

Discussion

Musculoskeletal pain has immediate and long-term consequences for an individual (45). Nurses have reported increased back pain due to prolonged standing and working in certain positions for a long time and low back pain associated with their positions in certain tasks (46). Some reduction in the prevalence of neck and back pain among nurses has been achieved through education on safe patient care (47). However, there is not enough data on this subject. Therefore, in our study, we aimed to examine the

Table 2. Results of correlation analysis between different parameters, r

	Age	**Duration of working in the unit (years)**	**Occupation duration (years)**	**Weekly working hours**
Age	1	0.743**	0.965**	-0.173
Duration of employment in the unit (years)	0.743**	1	0.775**	-0.019
Duration of employment (years)	0.965**	0.775	1	-0.173
Weekly working hours	-0.173	-0.019	-0.173	1
Duration of time spent a day on the computer	-0.19	0.079	-0.012	0.037
Duration of pain (days)	-0.53	-0.016	-0.078	0.097
Level of neck pain (VAS)	-0.85	-0.040	-0.113	0.124
SF-36 physical functioning	-0.244**	-0.292**	-0.200*	-0.194*
SF-36 physical role	-0.025	-0.064	0.019	-0.181*
SF-36 emotional role	0.066	-0.025	0.087	-0.291**
SF-36 energy	-0.060	-0.025	-0.054	-0.090
SF-36 emotional well-being	0.105	0.074	0.138	-0.191*
SF-36 social functioning	0.081	-0.016	0.093	-0.353**
SF-36 pain	0.040	-0.005	0.073	-0.229*
SF-36 general health	0.000	-0.044	0.030	-0.157
SF-36 health change	-0.077	-0.082	-0.019	-0.081
	Duration of time spent a day at the computer	**Duration of current pain (days)**	**Level of neck pain (VAS)**	**SF-36 physical function**
Age	-0.14	-0.053	-0.085	-0.244**
Duration of employment in the unit (years)	0.079	-0.016	-0.040	-0.292**
Duration of employment (years)	-0.012	-0.078	-0.113	-0.200*
Weekly working hours	0.037	0.097	0.124	-0.194
Duration of time spent a day on the computer	1	0.163	0.163	-0.215*
Duration of pain (days)	0.163	1	0.804**	-0.345**
Level of neck pain (VAS)	0.163	0.804**	1	-0.478**
SF-36 physical functioning	-0.215*	-0.345**	-0.478	1
SF-36 physical role	-0.116	-0.359	-0.451	0.591*

Table 2. Continued

	Duration of time spent a day at the computer	Duration of current pain (days)	Level of neck pain (VAS)	SF-36 physical function
SF-36 emotional role	-0.113	-0.247	-0.289**	0.407**
SF 36 energy	-0.122	-0.205	-0.253	0.180*
SF 36 emotional well-being	-0.141	-0.253**	-0.381**	0.368**
SF-36 social functioning	-0.099	-0.432**	-0.564**	0.503**
SF-36 pain	-0.179*	-0.648**	-0.822**	0.530**
SF-36 general health	-0.060	-0.452**	-0.569**	0.530**
SF-36 health change	-0.090	-0.173	-0.296**	0.426**
	SF-36 physical role	**SF-36 emotional role**	**SF-36 energy/ fatigue**	**SF-36 emotional well-being**
Age	-0.025	0.066	-0.060	0.105
Duration of employment in the unit (years)	-0.064	-0.025	-0.025	0.074
Duration of employment (years)	0.019	0.087	-0.054	0.138
Weekly working hours	-0.181*	-0.291**	-0.090	-0.191*
Duration of time spent a day on the computer	-0.116	-0.113	-0.122	-0.141
Duration of pain (days)	-0.359**	-0.247**	-0.205*	-0.253**
Level of neck pain (VAS)	-0.451**	-0.289**	-0.253**	-0.381**
SF-36 physical functioning	0.591**	0.407**	0.180*	0.368**
SF-36 physical role	1	0.539**	0.189*	0.351**
SF-36 emotional role	0.539**	1	0.254**	0.370**
SF-36 energy	0.189*	0.254**	1	0.553**
SF-36 emotional well-being	0.351**	0.370**	0.553**	1
SF-36 social functioning	0.571**	0.584**	0.399**	0.515**
SF-36 pain	0.588**	0.442**	0.246**	0.407**
SF-36 general health	0.492**	0.377**	0.400**	0.490**
SF-36 health change	0.360**	0.280**	0.359**	0.325**

SF-36: Short form-36, VAS: Visual pain scale, r: Correlation coefficient, *p<0.05, **p<0.01

presence of neck pain in nurses working in a university hospital and the factors affecting this pain.

Psychological stress exacerbates physical stress and is associated with job loss (48,49). It has been found that female health workers with increased occupational psychological stress have worse mental health (50). Therefore, the mental health of a patient with musculoskeletal symptoms is an indicator of the tendency to report pain and seek treatment and is associated with frequent general practice visits (50). Moreover, depression has been associated with increased pain intensity (51).

In a study conducted in 2014, it was determined that the pain threshold of women was higher than that of men (52). In addition, in another study conducted in 2015, it was shown that there are many differences between the two sexes, such as the composition of muscle fibers and changes in contractile functions (53). For these reasons, unlike most studies in the literature, only female nurses were included in our study to ensure homogenization.

While the presence of pain in the last month was found to be 58.1% in our study, it was found to be 41.9% in a study by Gül et al. (54) that included 217 nurses. In a study by Kandemir et al. (55) involving 162 theatre nurses participated, the rate of neck pain in the last month was found to be 39.5%. In a study by Carugno et al. (56) involving 751 nurses in which physical and psychological risk factors for musculoskeletal diseases of nurses in Italy and Brazil were evaluated, the rate of neck pain in the last 1 month was found to be 46.4% for Italian nurses and 40.4% for Brazilian nurses. Freimann et al. (57) included 221 nurses, and the rate of neck pain in the last month was reported as 38.9%.

71% of the nurses in our study were on night shifts. No statistically significant correlation was found between night shift and neck pain in the last month. In a study by Gül et al. (54) the rate of

those who kept the night shift was determined as 64.5%. Çelik et al. (58) found a statistically significant relationship between nurses' night shift keeping rate of 70.3% and right forearm and bilateral knee pain in nurses who were on night shift. In our study, although a significant relationship was found in favor of neck pain, the number of night shifts was found to be similar to previous studies.

In our study, weightlifting was found to be 31.5% among the factors triggering neck pain. Çelik et al. (58) reported that 40.2% of the nurses complained of weightlifting and neck pain and a statistically significant relationship was found (p=0.037).

In our study, there is a statistically strong correlation between computer use and triggering neck pain (p=0.000). In our study, the rate of patients whose neck pain was triggered by computer use was 37.1% and the rate of neck pain in the last month of these patients was 52.8%. In a study by Gül et al. (54) 20.1% of nurses describe musculoskeletal pain triggered by computer use. In our study, as high as 95.8% of the nurses stated that their jobs were stressful and their pain was triggered by stress, a statistically significant correlation was found between the amount of stress and the presence of neck pain in the last month (p=0.004). Joslin et al. (59) in a study that included 34 nurses, 11 of 25 nurses with neck pain attributed neck pain to psychological stress.

When the units they worked at were compared, a statistically significant relationship was found in the neck pain of the participants for the last month (p=0.019). In our study, the rate of those with neck pain in the last one month was determined as 63% in intensive care nurses, while it was determined as 63.3% in ward nurses and 27.8% in outpatient nurses. Çelik et al. (58) in a cross-sectional study including 111 intensive care unit nurses, the prevalence of neck pain in intensive care unit nurses was found to be as high as 73.9%, similar to our study. While intensive care unit and ward nurses perform compelling tasks such as lifting patients, positioning, personal care, they are exposed to factors such as stress and wrong movement.

91.9% of the nurses participating in our study feel tired. 60.5% of the nurses who felt tired had neck pain in the last month. No statistically significant relationship was found between neck pain and fatigue in the last month. Çelik et al. (58) in a study, 85.6% of the nurses mostly felt tired. This value was similar to our study, but unlike our study, a statistically significant relationship was found between fatigue and neck pain. The difference here is; the inclusion of intensive care unit nurses in this study and the fact that the rate of neck pain was 73.9% significantly higher than the rate of 58.1% found in our study.

27.4% of the nurses who participated in our study had additional diseases. A statistically significant correlation was found between the presence of additional disease and the presence of pain in the last month (p=0.032). As an additional disease, thyroid diseases were seen in 11 nurses with neck pain in the last month and came to the fore as the most common comorbidity. They followed thyroid diseases as diabetes in 4 nurses, migraine in 3 nurses, and asthma in 2 nurses, respectively. Grimby-Ekman et al. (60), the prevalence of comorbidity in patients with musculoskeletal pain was found to be statistically significant. In their study, among the participants with pain, those with heart disease were 10%, those without pain had a heart disease rate of 6.7% (p<0.001), the percentage of those with pain but hypertension was 26.5% and those without pain had hypertension at 18.7% (p<0.001), the rate of those who have pain and diabetes at the same time was 7.3%, while the rate of those who did not have pain and had diabetes was 14.4% (p<0.001). Contrary to our study, in contrast to questioning the presence of additional diseases in this study, it is not certain whether they have additional diseases or not, as the presence of certain diseases (such as heart disease, hypertension, diabetes) is questioned as a yes/no dichotomous.

Among the nurses in our study, 20.8% of those who had neck pain in the last month were observed to be using medications for neck pain. Of those with neck pain in the past, 11 use oral non-steroidal anti-inflammatory drugs and 3 use myorelaxants. Gül et al. (54) found that the rate of using medication for neck pain among the nurses participating in the study was 38.2%. Contrary to our study, there was no assessment of pain severity in this study, so the difference between drug use may be due to the higher severity of pain in the study.

In our study, no statistically significant correlation was found with the level of education and the presence of neck pain in the last month. Kandemir et al. (55) similarly, no significant relationship was found between education level and presence of neck pain.

In our study, no statistical difference was found between marital status and neck pain in the last month.

SF-36 physical function score decreased with age, working time in the unit and increasing working time in the profession (p<0.01).

As the weekly working hours increase, SF-36; a statistically significant decrease was found in emotional role (p<0.01), mental health (p<0.05) scores.

In our study, a statistically significant decrease was found in the SF-36 physical function score as the number of hours of computer use increased (p<0.05). Joslin et al. (59) reported that 76% of nurses with neck pain (n=19) was affected by certain triggers. Ardahan and Simsek (61) found an increase in the rates of musculoskeletal pain in all regions in office workers after using a computer longer than 7 hours.

A statistically significant positive correlation was found between current pain duration and VAS value (p<0.01). Basakci Calik et al. (62), office workers whose pain lasts for more than 3 months have a higher pain score than those with acute pain.

SF-36 with current pain duration; physical function (p<0.01), energy/fatigue (p<0.05), mental health (p<0.01), social function (p<0.01) a statistically significant positive correlation was found in pain (p<0.01) and general health (p<0.01) scores.

Joslin et al. (59) compared nurses without neck pain to those with existing neck pain; lower mental health, physical function and total SF-36 scores were obtained.

The presence of neck pain in the past was found to be strongly associated with current neck pain (p=0.003). This is an expected result since it is possible to have a neck pathology in the past or to continue the habits that may adversely affect the ongoing pathological process.

Neck pain started in 66% of the nurses after they started their profession, and 79.3% of them had neck pain in the last month. The rate of the participants whose neck pain first appeared after the beginning of the nursing profession was 66% and the rate of the participants whose pain arose in the period before starting the nursing profession for the first time was determined as 34%. While only 9.7% of the participants who had a neck pain problem in the period before starting the nursing profession had neck pain for the last month, 90.3% of the participants who had neck pain for the first time after starting the profession had neck pain for the last month. A statistically strong correlation was found between the onset of pain after starting the profession and neck pain for the last month (p=0.000). Gül et al. (54) found the average age of onset of neck pain in nurses to be 25. Considering the age of nurses starting to work, it was found to be similar to our study.

The strength of our study is that all of the nurses participating in the study were selected from female nurses and thus, it was aimed to make a healthier comparison between the compared units by excluding possible anatomical and physiological differences between the two genders, such as possible pain threshold differences between male nurses and female nurses, and muscle mass/structure. Before starting to our study, the required number of participants was determined by performing a power analysis and the determined number of participants was included. This is one of the strengths of our work. Among the limitations of our study, the body mass index values of the nurses included in the evaluation, whether the participants do regular sports, the presence of habits such as smoking and alcohol use, and the absence of important issues in terms of neck pain such as family history of rheumatological disease can be counted.

Conclusion

Musculoskeletal diseases are more common in healthcare workers than in the normal population. In our study, in which 124 female nurses were included, the prevalence of neck pain in nurses working in a university hospital and related factors were investigated and its potential relationship with factors such as ergonomic conditions, night shift, stress and fatigue. In order to prevent neck pain, ergonomic work environment modifications such as adjusting computer monitors to the appropriate height, not staying in the same anatomical position for a long time should be encouraged and physical training should be given at regular intervals to protect them from musculoskeletal pain. Regular surveys should be conducted to monitor their health and preventive measures should be taken. Arrangements should be made and measures should be taken to make the work environment less stressful. More prospective studies are needed to evaluate the long-term effects of neck pain and the relationship between environmental and occupational regulations and response to treatment.

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Ethics

Ethics Committee Approval: Ethics committee approval was obtained with the decision of Ege University Ethics Committee dated 22.01.2020 and numbered 20-1.1T/46.

Informed Consent: Nurses working in the previously mentioned units of university hospital were informed about the study, written consents were obtained from those who agreed to participate in the study.

Authorship Contributions

Surgical and Medical Practices: İ.K., E.Ç., E.Y.G., M.B., Y.K., Concept: İ.K., E.Ç., E.Y.G., M.B., Y.K., Design: İ.K., E.Ç., E.Y.G., M.B., Y.K., Data Collection or Processing: İ.K., E.Ç., E.Y.G., M.B., Y.K., Analysis or Interpretation: İ.K., E.Ç., E.Y.G., M.B., Y.K., Literature Search: İ.K., E.Ç., E.Y.G., M.B., Y.K., Writing: İ.K., E.Ç., E.Y.G., M.B., Y.K.

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