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INVESTIGATION OF THE RELATIONSHIP BETWEEN WORKING POSTURES OF PHYSIOTHERAPISTS WORKING IN SPECIAL EDUCATION AND REHABILITATION CENTERS AND HOSPITALS WITH PAIN, BODY AWARENESS LEVEL, CHRONIC FATIGUE AND DEPRESSION

Özel Eğitim ve Rehabilitasyon Merkezleri ile Hastanelerde Çalışan Fizyoterapistlerin Çalışma Postürlerinin Ağrı, Vücut Farkındalık Düzeyi, Kronik Yorgunluk ve Depresyon ile İlişkisinin İncelenmesi

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ABSTRACT

This study aims to examine the relationship between physiotherapists' working posture and pain, body awareness level, chronic fatigue, and depression levels and to determine whether these parameters depend on the institution where they work. 93 randomly selected physiotherapists between the ages of 24-52 were divided into two groups according to their institutions: Rehabilitation centers/hospitals. Working posture was evaluated with the Ovako Working Posture Analysing System (OWAS), pain was evaluated with the Extended Nordic Musculoskeletal Questionnaire (NMQ-E) and Visual Analogue Scale (VAS), body awareness level was evaluated with the Body Awareness Questionnaire (BAQ), chronic fatigue was evaluated with the Chronic Fatigue Syndrome/Self Assessment Form (CFS), depression level was evaluated with the Beck Depression Inventory (BDI). A relationship was found between OWAS-leg posture and NMQ-E-ankle pain ($r=-0.238$), between OWAS-back posture-arm posture-action class and VAS ($r1=0.25$; $r2=-0.27$; $r3=0.23$), and between OWAS-back posture-action class and BDI ($r1=0.25$; $r2=0.26$) ($p<0.05$). However, a significant difference was found only between the OWAS-back posture-action class and BDI results of physiotherapists working in different fields ($p<0.05$). It was observed that the working posture of physiotherapists affected the level of pain and depression and that physiotherapists working in rehabilitation centers had higher levels of depression and used more challenging back postures.

Keywords: Hospital, Pain, Physiotherapist, Posture, Rehabilitation centers.

ÖZ

Bu çalışmada amaç fizyoterapistlerin çalışma postürü ile ağrı, vücut farkındalık düzeyi, kronik yorgunluk ve depresyon düzeyi arasındaki ilişkinin incelenmesi ve bu parametrelerin çalışılan kuruma bağlı olup olmadığını belirlemektir. 24-52 yaş arası randomize seçilen 93 fizyoterapist kurumlarına göre Rehabilitasyon merkezleri/hastane olmak üzere iki gruba ayrıldı. Çalışma postürü Ovako Çalışma Postürü Analiz Sistemi (OWAS), ağrı genişletilmiş NORDİC kas iskelet sistemi anketi (NMQ-E) ve Vizüel Analog Skala (VAS), vücut farkındalık düzeyi Vücut Farkındalık Anketi (BAQ), kronik yorgunluk Kronik Yorgunluk Sendromu Öz Değerlendirme Formu (CFS), depresyon düzeyi Beck Depresyon Envanteri (BDI) ile değerlendirildi. OWAS-bacak postürü ile NMQ-E-ayak bileği ağrısı ($r=-0.238$) arasında, OWAS-sırt postürü-kol postürü-eylem sınıfı ile VAS ($r1=0.25$; $r2=-0.27$; $r3=0.23$) arasında ve OWAS-sırt postürü-eylem sınıfı ile BDI ($r1=0.25$; $r2=0.26$) arasında ilişki bulundu ($p<0.05$). Bununla birlikte farklı alanlarda çalışan fizoterapistlerin sadece OWAS-sırt postürü-eylem sınıfı ve BDI sonuçları arasında anlamlı fark olduğu bulundu ($p<0.05$). Fizyoterapistlerde çalışma postürünün ağrı ve depresyon düzeyini etkilediği; rehabilitasyon merkezlerinde çalışan fizyoterapistlerin depresyon düzeylerinin daha yüksek olduğu ve daha zorlayıcı sırt postürlerini kullandığı görüldü.

Anahtar kelimeler: Ağrı, Fizyoterapist, Hastane, Postür, Rehabilitasyon merkezleri.

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INTRODUCTION

Physiotherapists are members of the healthcare team who work with patients to prevent, improve, or manage physical and functional impairments that result in disability (Association, 2015). Physiotherapists work with different patients in various areas, including inpatient and outpatient rehabilitation centers, job sites, and schools, using different techniques for long working hours (Brewer, Ogbazi, Ohl, Daniels & Ortiz, 2016). Individuals use their body parts disproportionately in the jobs they work due to the unique ways of working those jobs. Physiotherapists' constant and inappropriate postures, helping patients with their exercises, lifting them, and taking part in their transfers may cause them to experience various problems (Devreux, Al-Awa, Mamdouh & Elsayed, 2012). Additionally, they may be exposed to various risks depending on the working environment, specialization, working position, or amount of work (e.g. number of patients and total working hours) (Ezzatvar et al., 2020). All these factors can affect physiotherapists in physiological, psychological, and social aspects.

Long-term use of inappropriate working postures such as static posture, unconscious posture, posture in bent positions, repetitive activities, and kneeling-squatting activities cause chronic musculoskeletal system musculoskeletal system problems. Biomechanical studies have shown that factors such as trunk flexion, rotation, and excessive weight bearing, which are frequently used by physiotherapists, play a role in the occurrence of injuries (Galinsky, Waters & Malit, 2001). Poor posture causes pain, especially back and neck pain, in patients with musculoskeletal system disorders (Brumagne, L. Janssens, E. Janssens & Goddyn, 2008). There is evidence that musculoskeletal system pain is closely related to body awareness and postural problems and that people with chronic pain experience changes in body awareness (Lewis, Kersten, McCabe, McPherson & Blake, 2007). Due to chronic pain, the sensation between the mind and body is disrupted, and mental stress increases, and then patients often have problems defining their emotions and bodily functions. It has been shown that individuals with a better ability to identify the body have a better quality of life and lower pain levels and that patients suffering from musculoskeletal system pain have reduced body awareness (Erden, Altuğ & Cavlak, 2013). Posture disorders that occur during physical activities also cause problems such as deterioration of body mechanics, inability to go to work, limitation in movements due to fear of pain, decrease in quality of life, tendency to depression, disruptions in sleep patterns, and fatigue (Porter, 2013). In addition, working conditions cause a heavy psychological burden on those working in the healthcare field, leading to stress and tension (French, Lenton, Walters & Eyles, 2000). Intense and long-term stress in the work environment causes many physical and

psychological effects on the person (Yıldırım & Hacıhasanoğlu, 2011). Pain resulting from musculoskeletal system exposure also affects the psychological state and may cause depression (B. J. Sadock, V. A. Sadock & Ruiz, 2000).

Although physical therapists are aware of the dangers of biomechanics and poor posture, they still experience professional problems. When looking at the literature, it has been shown that therapists who have a high number of patients daily and use manual techniques are more likely to experience thumb, wrist, or hand musculoskeletal system pain (Caragianis, 2002; Power & Fleming, 2007). Various studies have examined the effects of work-related factors such as working hours, number of patients per week, and years of experience on physiotherapists (Adegoke, Akodu & Oyeyemi, 2008; Rozenfeld, Ribak, Danziger, Tsamir & Carmeli, 2010). Additionally, it has been reported that the ergonomic risks and, thus, various problems such as musculoskeletal system problems may be different between physiotherapists working with pediatric patients and physiotherapists working with adult patients (Ercan, Ince Parpucu, Z. Başkurt & F. Başkurt, 2024; Somarajan et al.). It can be used to highlight work-related risk factors, improve working conditions, and develop effective interventions targeting Physiotherapists. Therefore, this study aims to examine the relationship between Physiotherapists' working posture and pain, body awareness level, chronic fatigue, and depression levels and to determine whether there is a difference between these parameters depending on the institution where they work.

MATERIALS AND METHODS

Study Design

This is a cross-sectional and non-interventional study designed to compare Physiotherapists working in private education and rehabilitation centers with Physiotherapists working in hospitals in terms of certain parameters. In order to conduct the study, approval was received from the Bingöl University Scientific Research and Publication Ethics Committee dated 31.03.2023 and numbered 23/01. The principles of the Declaration of Helsinki were followed during the conduct of the study. Before starting the study, each participant who agreed to participate in the study signed an informed consent form.

Participants

The population of this research consisted of physiotherapists working in special education and rehabilitation centers throughout Turkey and physiotherapists working in hospitals. Physiotherapists who agreed to participate in the study and met the inclusion criteria were

selected from the relevant population by an improbable random sampling method among physiotherapists working in special education and rehabilitation centers and physiotherapists working in hospitals. The study was conducted with 93 physiotherapists, including 47 in private education and rehabilitation centers and 46 in the hospital group. Physiotherapists who had completed at least three consecutive years in their field of practice and were actively working in their professional lives were included in the study. Individuals who had undergone musculoskeletal system-related surgery in the last year, individuals with neurological, rheumatic, or neoplastic problems, and individuals with musculoskeletal system-related disorders were excluded from the study. 163 physiotherapists filled out the online survey prepared for the study. 20 physiotherapists who did not meet the inclusion criteria and three physiotherapists who completed the questionnaire incompletely were excluded from the study.

Sample Size

In the power analysis performed before starting the study, with $\alpha = 0.05$ and $1-\beta$ (power) $= 0.80$; assuming that the prevalence of musculoskeletal system pain in physiotherapists is 5% (Kallistratos, Kallistratou, & Toliopoulos, 2009), it was calculated that at least 45 physiotherapists should be included in the study for each group. The sample size was determined by a power analysis utilizing the statistical software OpenEpi, version 3 (http://www.openepi.com), which is accessible to the public.

Measurements

Working posture, pain, body awareness level, chronic fatigue, and depression levels of physiotherapists working in private education and rehabilitation centers throughout Turkey and physiotherapists working in hospitals were evaluated. Initially, Google Forms was used to develop a data collection form. The created form is linked to the account of a specific Google user and confidentiality was observed to ensure data security. The primary author's Google account was used for these objectives. You can find our test form on the relevant author's Google Forms page. The test form was sent to physiotherapists online and they were asked to fill out this form themselves.

Outcome Measures

Ovako Working Posture Analysing System (OWAS)

OWAS was used to evaluate the working posture of physiotherapists. In the OWAS method, researchers record back, arms, legs, and load/force usage with the help of 4 codes as a result of their observations. There are 4 options for different back postures, 3 options for

different arm postures, 7 options for different leg postures, and 3 options for different load/force. The physiotherapists who participated in our study were asked to observe themselves, using their professional knowledge and experience. OWAS action classes were determined by the responsible researcher in line with the data obtained. OWAS action class code 1 indicates a normal and natural posture that does not have a harmful effect on the musculoskeletal system, and 4 indicates a posture that has serious effects on the musculoskeletal system (Esen & Fığlalı, 2013).

Extended Nordic Musculoskeletal Questionnaire (NMQ-E)

NMQ-E was used to evaluate pain related to the musculoskeletal system. It is a questionnaire that evaluates the presence, onset, frequency, outcome, and effects of musculoskeletal system-related pain in 9 parts of the body (Alaca, Safran, Karamanlargil & Timucin, 2019).

Visual Analogue Scale (VAS)

VAS was used to determine the physiotherapists' pain level. Participants are asked to indicate their pain intensity on a horizontal line. It is a reliable and easily applicable scale where 0 indicates no pain, and 10 indicates severe pain (Ferreira-Valente, Pais-Ribeiro & Jensen, 2011).

Body Awareness Questionnaire (BAQ)

BAQ was used to determine the level of body awareness. The survey developed by Shields et al., (Shields, Mallory & Simon, 1989) was adapted into Turkish by Seda Karaca (Karaca & Bayar, 2021) in 2017. It consists of 18 statements, including changes in body processes, sleep-wake cycle, prediction at the beginning of the disease, and prediction of body reactions. Each statement is scored between 1-7. A higher score indicates better body awareness (Karaca & Bayar, 2021).

Chronic Fatigue Syndrome/Self-Assessment Form

Participants were evaluated with generally accepted chronic fatigue syndrome (CFS) diagnostic criteria to determine whether they had CFS. CFS was demonstrated by the presence of two of the major criteria (fatigue and decrease in activities lasting more than six months) and at least four of the minor criteria (loss of memory, and concentration; neck and armpit lymph node tenderness; muscle pain; multiple joint pain; headache; sore throat; restless sleep; fatigue after exercise) (Bulut & Bulut, 2018).

Beck Depression Inventory (BDI)

BDI was used to assess the patient's emotional state. BDI is a reliable and valid scale assessing the severity of depression (Kapci, Uslu, Turkcapar & Karaoglan, 2008). It includes 21 symptom categories to measure physical, emotional, cognitive and motivational symptoms such as hopelessness, irritability, guilt, feeling of punishment, fatigue and weight loss seen in depression, and each category is scored between 0-3. A score range of 0-11 indicates no depression, 12-19 indicates mild depression, 20-25 indicates moderate depression, and 26-63 indicates severe depression (Nordahl & Stiles, 2007). A high score indicates that depression is severe (Kapci et al., 2008).

Statistical Analysis

The statistical software SPSS version 26 was used for the analyses. Using analytical methods (Kolmogorov-Smirnov) and visual (histograms and probability graphs), the variables' appropriateness for a normal distribution was assessed. Descriptive analyses were given using means and standard deviations for normally distributed variables, while frequencies and percentages were given for categorical (ordinal and nominal) variables. Whether the participant groups were similar in terms of the determined demographic information was investigated using the (nominal) Chi-square test for categorical data and the Mann-Whitney U test for numerical data. Similarly, the Mann-Whitney U Test was used to check whether there were differences between the groups in terms of some measured parameters. Finally, the relationship levels between the variables were investigated using the Spearman Test according to the Point biserial correlation analysis since the data were not normally distributed or were categorical. The determined relationship levels were interpreted as follows; $r \geq 0.8$ very strong correlation; $0.6 \leq r < 0.8$ strong correlation; $0.4 \leq r < 0.6$ moderate correlation, and $0.2 \leq r < 0.4$ weak correlation. In all analyses, the significance level was taken as 0.05.

RESULTS

Various demographic information regarding gender, age, weight, height, and some habits of the participants included in the study are summarized in Table 1. It was observed that physiotherapists working in Special Education and Rehabilitation Centers and hospitals were similar in terms of the determined characteristics ($p > 0.05$).

Table 1. Demographic Characteristics of Physiotherapists Working in Different Institutions

Characteristic	**Group 1 (n=47)**			**Group 2 (n=46)**		***p***
	M±SD			**M±SD**		
Age (yr)	28.83±4.2			29.17±3.0		0.288*
Height (cm)	168.28±17.9			167.07±7.9		0.102*
Weight (kg)	71.13±17.7			65.52±11.2		0.173*
Professional Experience Years (yr)	5.36±2.6			5.63±2.3		0.433*
		n	%	n	%	
Sex	Female	28	59.6	32	69.6	0.314**
	Male	19	40.4	14	30.4	
Marital Status	Married	19	40.4	19	41.3	0.931**
	Single	28	59.6	27	58.7	
Presence of Disease	Yes	3	6.4	4	8.7	0.673**
	No	44	93.6	42	91.3	
Alcohol Use	Yes	1	2.1	2	4.3	0.545**
	No	46	97.9	44	95.7	
Cigarette Use	Yes	12	25.5	6	13.0	0.127**
	No	35	74.5	40	87.0	

Group 1, Special Education and Rehabilitation; Group 2, Hospital; *, Mann–Whitney U-test; Chi-square test

While a significant and weak correlation was observed between the OWAS leg posture and ankle disorders of the participants included in the study (r=-0.238; p<0.05), no relationship was found between the working posture and disorders in other regions (p>0.05) (Table 2).

Table 2. The Relationship Between the Working Postures of Physiotherapists Working in Different Institutions and the Results of the Nordic Musculoskeletal System Survey

	NORDIC								
	Neck	**Shoulder**	**Back**	**Elbow**	**Hand**	**Waist**	**Hip**	**Knee**	**Ankle**
OWAS Back	r=0.024	r=-0.054	r=-0.146	r=0.166	r=-0.068	r=-0.154	r=-0.020	r=-0.046	r=-0.057
	p=0.818	p=0.609	p=0.163	p=0.112	p=0.981	p=0.140	p=0.846	p=0.659	p=0.584
OWAS Arms	r=0.047	r=0.121	r=0.133	r=-0.051	r=-0.003	r=0.152	r=0.042	r=0.059	r=0.105
	p=0.657	p=0.249	p=0.203	p=0.624	p=0.981	p=0.146	p=0.688	p=0.572	p=0.316
OWAS Legs	r=0.041	r=-0.063	r=0.103	r=0.155	r=-0.003	r=-0.023	r=0.138	r=-0.059	**r=-0.238**
	p=0.694	p=0.547	p=0.328	p=0.137	p=0.981	p=0.826	p=0.186	p=0.572	**p=0.022**
OWAS Loading	r=0.068	r=0.020	r=0.112	r=0.079	r=-0.003	r=-0.021	r=0.172	r=-0.045	r=0.109
	p=0.515	p=0.847	p=0.287	p=0.450	p=0.981	p=0.839	p=0.099	p=0.671	p=0.296
OWAS Action Class	r=0.106	r=-0.012	r=-0.091	r=0.152	r=-0.003	r=-0.125	r=0.047	r=0.013	r=-0.168
	p=0.313	p=0.906	p=0.385	p=0.144	p=0.981	p=0.233	p=0.653	p=0.904	p=0.106

OWAS, Ovako Working Posture Analysing System; r = Spearman Test; p<0.05 value

A significant and weak relationship was found between OWAS back, arm working postures and action class and VAS results (r1=0.25; r2=-0.27; r3=0.23; p<0.05) and between OWAS back posture and action class and BDI results (r1=0.25; r2=-0.26; p<0.05). On the contrary, no significant relationship was detected between the working postures of various regions and the VFA and CFS results (r<0.2; p>0.05) (Table 3).

Table 3. The Relationship Between Working Postures and Chronic Pain, Body Awareness Level, Chronic Fatigue and Depression Levels of Physiotherapists Working in Different Institutions

Working posture	VAS	BAQ	CFS	BDI
OWAS Back	**r=0.25 (p=0.016)**	r=-0.10 (p=0.329)	r=0.05 (p=0.626)	**r=0.25 (p=0.015)**
OWAS Arms	**r=-0.27 (p=0.008)**	r=0.07 (p=0.492)	r=0.08 (p=0.438)	r=-0.15 (p=0.154)
OWAS Legs	r=-0.05 (p=0.637)	r=-0.003 (p=0.981)	r=0.08 (p=0.433)	r=0.08 (p=0.444)
OWAS Loading	r=0.04 (p=0.719)	r=-0.22 (p=0.832)	r=0.12 (p=0.248)	r=0.17 (p=0.101)
OWAS Action Class	**r=0.23 (p=0.030)**	r=-0.12 (p=0.252)	r=0.09 (p=0.403)	**r=0.26 (p=0.012)**

OWAS, Ovako Working Posture Analysing System; VAS, Visual Analogue Scale; BAQ, Body Awareness Questionnaire; CFS, Chronic Fatigue Syndrome/Self-Assessment Form; BDI, Beck Depression Inventory; r = Spearman Test; $p<0.05$ value

In comparisons between groups, it was seen that physiotherapists working in special education and rehabilitation centers and hospital environments differed only in terms of back area working posture and BDI results. ($p<0.05$) (Table 4, 5).

Table 4. Comparison of Physiotherapists Working in Different Institutions in Terms of Working Postures and Some Parameters Determined by Measurement

	Group 1 O (min-max)	Group 2 O (min-max)	Z	*p*
OWAS Back	2 (1-4)	1 (1-4)	-2.267	**0.023***
OWAS Arms	1 (1-3)	1 (1-3)	-0.275	0.784*
OWAS Legs	3 (1-7)	2 (1-7)	-0.735	0.462*
OWAS Loading	2 (1-3)	1 (1-3)	-1.928	0.054*
OWAS Action Class	2 (1-4)	2 (1-4)	-1.339	0.181*
VAS	3.23 (1-7)	3.4 (1-9)	-0.231	0.817*
BAQ	88.87 (18-126)	89.37 (38-117)	-0.235	0.815*
BDI	15.89 (0-58)	9.07 (0-32)	-1.978	**0.049***

Group 1, Special Education and Rehabilitation; Group 2, Hospital; OWAS, Ovako Working Posture Analysing System; VAS, Visual Analogue Scale; BAQ, Body Awareness Questionnaire; BDI, Beck Depression Inventory; *, Mann–Whitney U-test

Table 5. Comparison of Nordic Musculoskeletal System Questionnaire and Chronic Fatigue Syndrome Results of Physiotherapists Working in Different Institutions

		Group 1 (n=47) n (%)	Group 2 (n=46) n (%)	*p*
Neck	Yes	22(46)	28(60)	0.249
	No	25(53)	18(39)	
Shoulder	Yes	15(31)	19(41)	0.469
	No	32(68)	27(58)	
Back	Yes	22(46)	23(50)	0.920
	No	25(53)	23(50)	
Elbow	Yes	2(4)	7(15)	0.091
	No	45(95)	39(84)	
Hand	Yes	13(27)	13(28)	1
	No	34(72)	33(71)	
Waist	Yes	24(51)	27(58)	0.595

	No	23(48)	19(41)	
Hip	Yes	7(14)	13(21)	0.256
	No	40(85)	33(79)	
Knee	Yes	8(17)	16(25)	0.085
	No	39(83)	30(74)	
Ankle	Yes	3(6)	4(7)	0.714
	No	44(93)	42(92)	
CFS	Yes	6(12)	6(13)	1
	No	41(87)	40(87)	

Chi-square test; CFS, Chronic Fatigue Syndrome/Self-Assessment Form; $p<0.05$ value

DISCUSSION

As a result of the study was conducted to examine the relationship between physiotherapists' working posture and pain, body awareness level, chronic fatigue, and depression levels and to determine whether there is a difference between these parameters depending on the institution where they work; a relationship was found between working posture and only pain and depression levels. In addition, it was observed that there was a difference between the two groups with different working conditions only in the working posture of the back region and depression levels.

When the literature is examined, there are limited studies examining the working posture of physiotherapists. Çınar Medeni et al. reported that 34.5% of the physiotherapists working in Turkey were in "code 1", 48.3% were in "code 2", 13.8% were in "code 3" and 3.4% were in "code 4" OWAS action class (Cinar-Medeni, Elbasan, Düzgün & Kilinç, 2015). In another study, it was shown that 59% of physiotherapists working in Egypt were in the code 1 action class, 35% in the code 2 action class, and 5% in the code 3 action class (Abd El Hay, El Sayed & Saleh, 2019). In our study, consistent with the literature, the average action class of the physiotherapists in both groups was found to be "code 2". According to the results of the OWAS method in our study, it was concluded that the postures of physiotherapists are at risk, and ergonomic adjustments are required. This may be related to the high proportion of physiotherapists working specifically with pediatric and neurological patients. According to our results, when we look at the regional postures of physiotherapists during work; Physiotherapists working in private education and rehabilitation centers mostly work in a standing position with both arms below shoulder level, leaning forward, and with one leg straight, bearing on one extremity; It was determined that physiotherapists working in hospitals were mostly in a standing position with both arms below shoulder level, their backs straight, both legs straight, and both extremities loaded. It was observed that therapists working in rehabilitation centers had a more distorted posture, but this did not reach statistical significance between the two

groups. We think that there was no difference in working posture between the two groups in our study, except for back posture, may be related to the density of physiotherapists working with pediatric patients in hospitals.

The link between poor work postures and the development of musculoskeletal system pain has been identified (SIMPSON, 1994). According to a study conducted on physical therapists who are members of the American Physiotherapy Association, a relationship was reported between physical therapy work and work-related musculoskeletal system disorders. Patient transfer activities and positioning have been associated with the lower back musculoskeletal system (Campo, Weiser, Koenig & Nordin, 2008). According to a study conducted on physiotherapists, the cause of work-related low back pain was reported to be activities such as patient care, bending, lifting, carrying, pushing, and pulling (Mierzejewski & Kumar, 1997). Çınar et al. stated that the head, neck, and trunk postures of healthcare workers, including physiotherapists, affect low back pain and that working postures should be corrected (Çınar-Medeni, Elbasan & Duzgun, 2017). In our study, a significant relationship was found between OWAS leg posture and NMQ-E ankle pain, and between OWAS back, arm working postures and action class and pain results measured by VAS. Consistent with studies in the literature, it was observed that as the risk in the physiotherapists' posture increased, the severity of pain also increased.

Alrowayeh et al. found that physiotherapists had complaints of low back (32%), neck (21%), back (19%), shoulder (13%), hand/wrist (11%), knee (11%), ankle/foot (6%), elbow (4%) and hip/thigh (3%) pain (Alrowayeh et al., 2010). Similarly, in another study, it was reported that physiotherapists experienced injuries most in the waist region, followed by the neck and thoracic region (Nordin, Leonard & Thye, 2011). In our study, results consistent with the literature were obtained, and waist, back, and neck pain was observed to be more common in both groups. Physiotherapists working in the private sector or private clinic have been reported to be more likely to report pain, particularly in the neck and shoulders, compared to those working in hospitals (Ezzatvar et al., 2020). In contrast, physiotherapists working in hospitals reported a higher prevalence of pain compared to their non-hospital counterparts (Alrowayeh et al., 2010). According to a study conducted in Malaysia, work-related musculoskeletal system disorders were found to be more common among physiotherapists working in the field of pediatrics (Nordin et al., 2011). Cromie et al reported a high prevalence of knee symptoms in physical therapists working in the field of pediatrics because these physical therapists spent the majority of their time kneeling and squatting (Cromie, Robertson

& Best, 2000). In this context, the results of the studies in the literature are not compatible with each other. In our study, no difference was observed between the two groups in terms of pain in the musculoskeletal system. Depending on our cultural characteristics, this may be related to the fact that sitting on the floor or one's knees are habitual positions because they are frequently used in our society, or that children are treated in a standing position. It may also be a result of physiotherapists having to use more static postures and prefer classical physical therapy methods, regardless of the work area, due to their increasing work tempo.

Body awareness, as a multidisciplinary concept that examines the person physically, socially, emotionally, and psychologically, is frequently used in studies on physical performance and health (Erden et al., 2013). Body awareness has been studied extensively in relation to attention, postural perception, and motor control (Proske & Gandevia, 2012; Thurm, Pereira, Fonseca, de Siqueira Cagno & Gama, 2017). It has been stated that as body awareness develops, the body schema matures depending on the work, profession, activity, or sport, and the person's posture is affected (Inal & Spor). In our study, no relationship was found between working posture and body awareness, and body awareness was similar between both groups. It may be thought that this is because the scale we used does not reflect all parameters of body awareness. In addition, it was determined that there was an inadequacy of the body awareness questionnaire that could be used in physiotherapy, the validity and reliability of which has been done in Turkish in the literature. Since it is important to evaluate body awareness in physiotherapy and rehabilitation programs, it is recommended to focus on studies in this field and to raise awareness of physiotherapists on these issues.

Fatigue can affect a person's performance in business life, impair alertness, and this can lead to irreversible mistakes (Wrzesińska, Rasmus, Wicherska & Krukowska, 2015). While the prevalence of CFS is 0.007–2.5% in the general population, it is stated to be 7% in hospital workers (Jason et al., 1999). The CFS rate in hospital workers has been reported to be 16.9% (Aydın, 2019). Younan et al. found that CFS was associated with musculoskeletal system disorders, education, age, and years of employment (Younan, Clinton, Fares, Jardali & Samaha, 2019). When the literature was reviewed regarding fatigue in physiotherapists, surprisingly few studies were found. Evaluation of fatigue in physiotherapists who work with patients during long treatment processes is very important in terms of both managing the negative consequences of fatigue and preventing chronic fatigue (Baysal, Gülsena & Seda). Similar to the results of our study, no significant relationship was found between working posture and CFS in the study conducted by Aydin et al. (Aydın, 2019). We think that the result we found is

probably related to more important factors affecting fatigue. In two other studies conducted on physiotherapists, it was stated that the group with the highest fatigue severity was physiotherapists working in the general field, while physiotherapists working in the field of orthopedics were the group with the lowest fatigue severity (Tekeli & Tedavi; Yakut & Yakut, 2011). The results of our study showed that 12% of the physiotherapists working in the rehabilitation center and 13% of the physiotherapists working in the hospital had CFS, and there was no difference in terms of fatigue between the two groups. Considering physical, under occupational conditions; Excessive weekly working hours and muscle overload are considered as possible results of fatigue. The fact that the fatigue severity of the groups in our study was very similar to each other may be related to the fact that the participants' working hours were close to each other and their working conditions were similar.

Various studies indicate that healthcare personnel have higher levels of depression than other professional groups (Martin et al., 1997). The fact that physiotherapists focus on people can cause them to be exposed to physical and mental stress. Although there are many studies on the level of depression, especially in physicians and nurses, it is noteworthy that physiotherapists are not given much attention (Glass, McKnight & Valdimarsdottir, 1993; Martin et al., 1997). In their study on physiotherapists, Aydin et al. found that there was no significant relationship between working posture and depression level (Aydın, 2019). Contrary to the results of this study, in our study, it was observed that the level of depression increased as the working posture deteriorated. Tekeli et al. found that depression rates were lowest in the field of orthopedics and highest in the field of general physiotherapy (Tekeli, 2009). In our study, the depression levels of physiotherapists working in private education and rehabilitation centers and hospitals were statistically different from each other. It was found that the level of depression was higher in physiotherapists working in rehabilitation centers. We think that this may be due to the fact that physiotherapists working in rehabilitation centers only work with children, are exposed to mobbing in rehabilitation centers, and experience more intense anxiety about losing their jobs.

CONCLUSION

In our study, it was concluded that physiotherapists' pain and depression levels were affected by their working posture. However, it was found that working posture did not affect body awareness and chronic fatigue. In addition, the different working areas caused differences in the physiotherapists' depression levels and back postures.

The data we obtained as a result of our study will serve as a guide for physiotherapists. Our study will provide a basis and shed light on the future in terms of offering solution suggestions to physiotherapists, providing training within the scope of vocational rehabilitation, investigating working conditions, especially in work areas where more problems are seen, and reducing risk factors on posture.

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