GÜNLÜK AKTİVİTELERE BAĞLI EL - BİLEK SORUNLARI ¹

HAND – WRIST DISORDERS CAUSED BY DAILY ACTIVITIES

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Öz: Bu çalışma, günlük aktivitelere bağlı el-bilek sorunlarının yaygınlığını saptamak amacıyla planlanmıştır. Tanımlayıcı tipteki bu araştırma, 16 Kasım 2015 - 30 Haziran 2016 tarihleri arasında Afyon Devlet Hastanesi polikliniklerine başvuran bireylere (n=400) uygulanmış, veri toplamada araştırmacı tarafından geliştirilen ve 3 bölümden oluşan anket formu kullanılmıştır. Araştırmaya katılanların yaşları 18 ile 86 arasında değişmektedir ve yaşlarının ortanca değeri 40.0'dır. Katılımcıların %67.8'i kadınlardan oluşurken, %73.5'i evlidir. Araştırma sonunda el ve el bileğinin sıklıkla kullanıldığı faaliyetler arasında bulaşık yıkamanın ilk sırada yer aldığı, katılımcıların el bileğinde ağrı, parmakların erken yorulması ve parmaklarda uyuşukluk şikayetlerinin bulunduğu, katılımcıların yaşlarıyla el ve el bileğiyle ilgili şikayetleri arasında ve el ve el bileğiyle ilgili şikayetlerine tanı konulma durumu arasında istatistiksel olarak anlamlı ilişki bulunduğu belirlenmiştir.

Anahtar Kelimeler: Türk Toplum, Günlük Aktivite, El Sorunları, Bilek Sorunları

Abstract: This study was planned to determine the prevalence of hand-wrist disorders caused by daily activities. Designed as a descriptive research, this study was conducted with persons (n=400) who were treated at Afyon State Hospital polyclinics between November 16, 2015 and June 30, 2016, data were collected by using a three-part survey form developed by the researcher. The ages of the participants ranged from 18 to 86 years and the median age was 40.0. While females constituted 67.8% of the participants, 73.5% were married. As a result of the research, it was determined that washing-up ranked first among the activities in which hands and wrists were frequently used and that a majority of the complaints involved wrist pain, rapid onset of tiredness in the fingers and they finger numbness. Additionally, it was found that the complaints of the females differed from those of the males, that the degree of difference was not high enough to be statistically significant and that the diagnostic status of the complaints varied according to gender.

Key Words: Turkish Society, Daily Activity, Hand Disorders, Wrist Disorders

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INTRODUCTION

Musculoskeletal disorders are complex conditions that are commonly observed in every stage of life, starting from as early as birth. A wide spectrum of diagnostic possibilities should be considered when evaluating these disorders. Everything from ergonomic inadequacy of devices or equipment, incorrect posture and sitting positions and long working hours can cause musculoskeletal pain (Hüner et al., 2013: 75-88; Ulusam et al., 2001: 26-32).

Common musculoskeletal disorders include back pain, osteoarthritis, rheumatoid arthritis, juvenile arthritis and osteoporosis (AIHW, 2016). Various musculoskeletal disorders related to the hands and wrists are relatively frequently observed, particularly in conjunction with certain activities performed.

The forearm, hand and wrist are among the body parts most often used in performing daily activities. Wrist functions are related to the positions of hands when engaged in catching and grasping activities. Minor, repetitive actions executed using fingers, wrists and elbows may cause disorders, particularly in wrist alignment. In such disorders, the tissues on which the muscles passing through the wrists adhere to bones are bruised and compressed, resulting in numbness and pain of the hand, decreased ability to move the thumb and

weakening in squeezing capacity of the hand. In other words, hand mobility is disrupted (Durmaz, 2009:1-18; Ministry of Education, 2014; Kuran, 2014: 43-49). Today, hand and wrist disorders are largely the result of computer use, incorrect ergonomics, mechanical loading due to manually lifted weights and various inflammatory neurological problems (Kuran, 2014: 43-49).

Forearm, hand and wrist disorders can be attributed to numerous causes. Nonspecific widespread pain in the forearm or wrist can be the result of various conditions, such as fibromyalgia, tenosynovitis, tendinitis or de quervain disease with radiation, carpal tunnel syndrome, cubital tunnel syndrome, osteoarthritis (affecting the wrist, the bottom of the thumb or carpometacarpal joints) and rheumatoid arthritis (Palmer, 2003: 113-135). These particular problems, among others, serve as significant causes of morbidity. However, because they are included in a heterogeneous disease group and constitute nonspecific regional pain syndromes, it is difficult to determine their frequency and the burden they place on health (Andréu et al., 2011: 31-42).

As hand functions play an important role in performing daily activities, the feeling of pain in this part of the body can lead to intense anxiety in many patients, particularly those working, for example, as keyboard operators, clerks, musicians or craft workers as well as

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those whose lifestyle require intensive use of their hands (Andréu et al., 2011: 31-42).

Although hand and wrist disorders commonly occur as part of daily life activities, these disorders can reach a level of discomfort, where sleep quality as well as general quality of life can be affected (Aptel et al., 2002: 546-555; Ferreira and Saldiva, 2002: 147-153; Buckle and Devereux, 2002: 207-217; Fathallah, 2010: 738-743; Eatough et al., 2012: 554-563; Cook et al., 2000: 347-356; Atroshi et al., 2007: 3620-3625). While there have been a large number of studies addressing musculoskeletal disorders concerning the hand and wrist, little to no research has been conducted on the prevalence of hand and wrist disorders caused by daily activities.

The purpose of this research was to determine the prevalence of hand-wrist disorders caused by daily activities.

METHOD

This descriptive research study was conducted with persons (n=400) who were treated

at Afyon State Hospital polyclinics between November 16, 2015 and June 30, 2016. In the collection of the data, the questionnaire form was used by prepared the researcher through literature survey (Durmaz, 2009:1-18; Hüner et al., 2013: 75-88; Ulusam et al., 2001: 26-32; Aptel et al., 2002: 546-555; Ferreira and Saldiva, 2002: 147-153; Buckle and Devereux, 2002: 207-217; Fathallah, 2010: 738-743). Prior to conducting the research, written permission was first obtained from the Afyon State Hospital, and medical ethical approval was received by Selçuk University, Faculty of Medicine Ethics Committee (12/08/2015-2015/310). Verbal consent to voluntarily participate in the study was obtained from all of the study participants.

The data obtained at the end of the survey administration process were evaluated by using the SPSS 17.0 (Statistical Package for Social Sciences for Windows) software package. Additional statistical analyses of the data were performed using Kruskal-Wallis and Mann-Whitney U tests.

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RESULTS

Table 1. Socio-Demographic Characteristics Of The Participants

		Age Median: 40.0 (18-86)			
Gender	n	%	Occupation	n	%
Female	271	67.8	Unemployed	196	49.0
Male	129	32.2	Civil Servant	62	15.5
Marital Status			Self-Employment	45	11.3
Single	106	26.5	Worker	42	10.4
Married	294	73.5	Other	43	10.8
Education Level			Retired	12	3.0
Illiterate	58	14.4	Monthly Income Status		
Literate	40	10.0	Good	83	20.8
Primary School	102	25.5	Middle	274	68.5
Secondary School	43	10.8	Bad	43	10.7
High School	79	19.8	Total	400	100.0
University	78	19.5			

The ages of the research participants varied in range between 18 and 86, with the median age being 40. Females constituted 67.8% of

the participants and 73.5% of the participants were married (Table I)

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*More than one answer has been given.

Figure I. The Some Activity Frequently Using Hands And Wrists

In Figure 1, the 741 responses provided by the study participants regarding the activities in which the hands and wrists were frequently used show that washing-up ranked first among these activities, with a percentage of 22.1%, handiwork/knitting ranked second with 16.7% and computer use ranked third with 15.2%. Among the 59 responses under the “other” option, it was found that 74.6%

of the activities involved cleaning tasks and 13.5% construction works.

The activities performed by the participants by using their hands and wrists are presented in Table 2, which shows that a majority of the participants (76.4%) repeated several times a day those activities performed frequently, approximately half of them (49.7%) conducted the activities at intervals of 1–2 hours and 19% at intervals of less than 1 hour.

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Table 2. Comparison Of Participants' Ages In Terms Of The Activities Performed Using Their Hands And Wrists

The Frequency of the Activity Performed Using Hands and Wrists	n*	%	X ²	p
Once a Day	43	11.8	9.721	.084**
Several Times a Day	278	76.4		
Once a Week	18	4.9		
Several Times a Week	10	2.7		
Once a Month	6	1.7		
Several Times a Month	9	2.5		
Total	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists	n*	%	X ²	p
Less Than 1 Hour	68	19.0	5.805	.121**
1-2 Hours	178	49.7		
3-4 Hours	58	16.2		
More Than 5 Hours	54	15.1		
Total	358	100.0		
Complaints Made About Hands and Wrists	n	%	Mann-Whitney U	p
Yes	229	57.3	13693.500	.000***
No	171	42.7		
Total	400	100.0		
Diagnosis Made of the Complaint About Hands and Wrists	n	%	Mann-Whitney U	p
Yes	65	16.2	8399.500	.004***
No	335	83.8		
Total	400	100.0		

*Incomplete answered.

**Kruskal-Wallis Test was conducted.

***Mann-Whitney Test was conducted.

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*More than one answer has been given.

Figure II. Hand And Wrist Complaints Of The Participants

In the total of 553 responses obtained from the participants in regard to hand and wrist complaints, it was determined that 27.8% of the complaints were related to wrist pain, 14.5% to quick exhaustion of the fingers. Table 3 presents the activities performed by the participants by using their hands and

wrists according to gender. Here it shows that 60.5% of the female participants and 50.4% of the male participants reported disorders, with 18.8% of the females indicating that a diagnosis of their complaint had been obtained while 10.9% of the males claimed the same.

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Table 3. Comparison Of Participants' Genders In Terms Of Activities Performed Using Hands And Wrists

	Female		Male		Total			
	n	%	n	%	n*	%	X ²	p
The Frequency of the Activity Performed Using Hands and Wrists								
Once a Day	31	12.3	12	10.7	43	11.8	7.696	.053
Several Times a Day	199	79.0	79	70.5	278	76.4		
Once a Week	15	6.0	13	11.6	28	7.7		
Other	7	2.7	8	7.2	15	4.1		
Total	252	100.0	112	100.0	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists								
	n	%	n	%	n*	%	X ²	p
Less Than 1 Hour	59	23.6	9	8.3	68	19.0	29.290	.000
1-2 Hours	133	53.2	45	41.7	178	49.7		
3-4 Hours	28	11.2	30	27.8	58	16.2		
More Than 5 Hours	30	12.0	24	22.2	54	15.1		
Total	250	100.0	108	100.0	358	100.0		
Complaints Made About Hands and Wrists								
	n	%	n	%	n	%	X ²	p**
Yes	164	60.5	65	50.4	229	57.3	3.664	.066
No	107	39.5	64	49.6	171	42.7		
Total	271	100.0	129	100.0	400	100.0		
Diagnosis Made of the Complaint About Hands and Wrists								
	n	%	n	%	n	%	X ²	p**
Yes	51	18.8	14	10.9	65	16.2	4.076	.044
No	220	81.2	115	89.1	335	83.8		
Total	271	100.0	129	100.0	400	100.0		

*Incomplete answered.

** Fisher's Exact Test was applied.

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Table 4. Comparison Of The Number Of The Daily Activities The Participants Performed Using Their Hands And Wrists With The Number Of Complaints

Number of the Daily Activities the Participants Performed Using Their Hands and Wrists				
	n*	%	X ²	p
1	108	29.5	12.347	.015
2	113	30.9		
3	126	34.4		
4	16	4.4		
5 and over	3	0.8		
Total	366	100.0		
The Frequency of the Activity Performed Using Hands and Wrists				
	n*	%		
Once a Day	43	11.8	.238	.888
Several Times a Day	278	76.4		
Once a Week	28	7.7		
Other	15	4.1		
Total	364	100.0		
The Duration of the Activity Performed Using Hands and Wrists				
	n	%		
Less Than 1 Hour	68	19.0	3.145	.370
1-2 Hours	178	49.7		
3-4 Hours	58	16.2		
More Than 5 Hours	54	15.1		
Total	358	100.0		

*Incomplete answered

Table 4, compares the number of the daily activities the participants performed by using their hands and wrists with the number of complaints, 34.4% of the participants expressed that they performed three activities in which the hands and wrists were frequently used, 30.9% (an approximate percentage

value) indicated two activities and 29.5% reported only one activity.

DISCUSSION

According to the demographic composition of the participants, 67.8% were females, 32.2% were males. When examining the responses, it was determined that washing-up

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ranked first among the activities in which hands and wrists were frequently used, with a percentage of 22.1%, handiwork/knitting ranked second with 16.7%, while 74.6% of the participants indicated the “other” option, with the response of cleaning tasks. The study by Umay et al. (2011) conducted with 119 participants resulted in higher percentages among the activities performed by housewives (70.6% of housewives reported washing-up activities and 67% handiwork activities) than those determined in the current study. In another study (2015) conducted by Biçer et al. involving the participation of 45 housewives presenting with complaints of numbness, tingling, pain and loss of strength in the hands found the frequency in which cleaning was conducted to be 4.16 ± 2.3 days within a given week. Lastly, the results of a study (2013) carried out by Aydemir et al. examining the records of 180 patients presenting with a pre-diagnosis of carpal tunnel syndrome (CTS), the findings related to housewives and farmers showed their hand-wrist disorders to be “severe”, and similar to the current study, handicraft and cleaning were found to be significant risk factors for hand-wrist disorders.

The participants in the current study gave a total of 553 responses to the question addressing hand and wrist complaints. Among these responses, it was determined that 27.8%

of the complaints involved wrist pain, 14.5% quick exhaustion of fingers, 13% numbness in the fingers and 4.4% immobility of the fingers. The study by Biçer et al., conducted (2015) with the participation of 45 females and 77 hands, resulted in higher percentages of certain complaints than those presented in the current study. Specifically, 72.7% of the participants in Bicer’s study had complaints of numbness, while 19.5% had complaints of both numbness and pain. In the study (2001) made by Pascarelli and Hsu involving 485 participants, including computer users, musicians and other professionals, a large majority of the participants reported fluctuating, multiple complaints, 37% of which involved hand pain, 29% wrist pain and 15% finger pain. The current study has shown that while 60.5% of the females and 50.4% of the males had hand and wrist disorders, the diversity of disorders was not high enough to be statistically significant and diagnostic status varied according to gender ($p > 0.05$). Unlike the current study, the study carried out by Violante et al. (2007) with the participation of 2092 people indicated that there was a strong relationship between work requiring tight grasping or repetitive actions and gender. Leveille et al.’s (2005) study involving the participation of 1062 people demonstrated that females experienced more pain in one or more body parts and that this pain occurred more commonly in the females than in the males. Moreover,

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a study performed by Solidaki et al. (2010) with the participation of 596 people indicated that localized musculoskeletal pain, particularly back and neck pain, was common in both genders, and that neck, shoulder and hand/wrist pain was more commonly observed in females than in males.

The current study found there to be a statistically significant relationship between the number of daily activities performed and the hand and wrist complaints of the participants ($p < 0.05$). A study conducted by Bonfiglioli et al. (2007) with the participation of 396 people showed that CTS symptoms were more commonly observed in full-time employees than in part-time ones. Furthermore, a study performed by Tanaka et al. (2001) found a relationship between the repetitive bending and flexing movements of hands and wrists and significant tendinitis. In a study carried out with engineering department students, (2004) finger, hand and wrist pain were quite frequently observed. The same study found a relationship between years of computer use, the weekly use of computers and pain (Schlossberg et al., 2004: 297-303).

CONCLUSION

As a result of the research, it was determined that washing-up ranked first among the activities in which hands and wrists were frequently used and that a majority of the complaints

involved wrist pain, rapid onset of tiredness in the fingers and they finger numbness. Additionally, it was found that the complaints of the females differed from those of the males, that the degree of difference was not high enough to be statistically significant and that the diagnostic status of the complaints varied according to gender.

Hand and wrist disorders commonly occur as part of daily life activities, these disorders can reach a level of discomfort and general quality of life can be affected. Taking the gender differences of the individuals into consideration, various education programs and health services should be provided to create greater awareness about hand-wrist disorders.

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