Evaluation of Fatigue in Individuals with Arthritis

Artritli Bireylerde Yorgunluğun Değerlendirilmesi

(Araştırma)

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ABSTRACT

Background: Complaints of fatigue are common almost all chronic illnesses, especially prevalent in pain disorders such as fibromyalgia syndrome, rheumatoid arthritis, and osteoarthritis.

Objective: This study was conducted for the purpose of determining fatigue in individuals with arthritis.

Method: Data had obtained from 250 arthritis patients at Physiotherapy and Immunology policlinics and clinics of Atatürk University Hospital in Turkey between May and July 2005. As the data gathering tools, a questionnaire form and Visual Analogue Scale for Fatigue (VAS-F) were used.

Results: Internal consistency for VAS-F was good for arthritis individuals. Cronbach's alpha of fatigue subscale was 0.87 and energy subscale was 0.84. Statistically significant differences were found between fatigue and energy subscales and socio-demographic variables. These differences were identified between the VAS-F point averages and female, older, widowed, literate, more income, carrying on with special exercise programs.

Conclusion: Fatigue levels of individuals with arthritis was found to be high. This study had determined socio-demographic variables associated with the fatigue.

Key Words: *Arthritis, fatigue, Visual Analogue Scale for Fatigue, nursing, pain*

ÖZET

Giriş: Yorgunluk şikayeti, neredeyse tüm kronik hastalıklarda özellikle de osteoartrit, romatoid artrit, fibromyalji gibi ağrı sorunu yaşanan hastalıklarda yaygın şekilde görülür.

Amaç: Bu çalışma artritli bireylerin yorgunluk durumunu belirlemek amacı ile yapılmıştır.

Yöntem: Veriler, Atatürk Üniversitesi Araştırma Hastanesi Fizik Tedavi-Rehabilitasyon ve İmmunoloji poliklinik ve kliniklerinde Mayıs-Temmuz 2005 tarihleri arasında 250 artrit hastası üzerinde toplanmıştır. Veri toplama aracı olarak soru formu ve Yorgunluk için Görsel Benzerlik Skalası kullanılmıştır.

Bulgular: Artritli bireylerde Yorgunluk için Görsel Benzerlik Skalası'nın iç tutarlılığı iyi bulunmuştur. Yorgunluk alt skalasının Cronbach alfası 0.87, enerji alt skalasının ise 0.84'dür. Sosyo-demografik özellikler ile yorgunluk ve enerji alt skalası puan ortalamaları arasında istatistiksel olarak önemli farklılıklar bulunmuştur. Bu farklılıklar kadın, yaşlı, dul, okur-yazar, ekonomik durumu iyi olan ve özel egzersiz programlarına katılanlar arasında saptanmıştır.

Sonuç: Artritli bireylerde yorgunluk seviyesi yüksek bulunmuştur. Bu çalışmada, sosyo-demografik değişkenler ile yorgunluk arasında ilişki olduğunu belirlenmiştir.

Anahtar Kelimeler: *Artrit, yorgunluk, Yorgunluk için Görsel Benzerlik Skalası, hemşirelik, ağrı*

Introduction

Fatigue affects a person's health, reduces performance[1]. Fatigue is a subjective feeling of low vitality that disrupts daily functioning, with lifetime prevalence in the community of roughly 20 %[2]. Complaints of fatigue are common to nearly every major chronic illness[3] and are especially prevalent in pain disorders such as fibromyalgia syndrome[4-8], rheumatoid arthritis[4-7,9-12], and osteoarthritis[4,5,7,8,11,13]. Fatigue may have a marked impact on quality of life in rheumatologic disease[5-7,14]. However, fatigue is a side effect of many medications, most frequently drugs for chronic illness. Patients may ask health professionals if any medications people are taking cause fatigue, and whether any adjustments can be made to improve the situation[6].

Literature states that fatigue assessment adds much to the understanding and management of patients and diseases[1,2,5-7,15]. The treatment and self-management of fatigue in patients with arthritis is receiving increasing interest as its importance to patients becomes apparent, and this requires accurate measurement of fatigue[16]. All over the world, there are studies showing that the prevalence of fatigue is high or very high in rheumatologic patients[7-10,12,14-20]. However in Turkey there are deficient studies on this topic. It is important for nurses to be knowledgeable about the fatigue in arthritis when providing care to arthritis patients because of possible interactions with other treatments, delays in seeking care, and poor quality products. The aims of this descriptive cross-sectional study were (a) to evaluated fatigue in individuals with arthritis (b) to describe socio-demographic factors associated with the fatigue.

Materials and Methods

Participants: Data had obtained from 250 arthritis patients at Physiotherapy and Immunology policlinics and clinics Atatürk University Hospital in Turkey between May and July 2005. The study took a convenience sample of 261 patients with arthritis from the hospital in the east of Turkey. Data of eleven subjects (4.2 %) were excluded from this study for incomplete response. Eventually, the study was conducted total 250 (95.8 %) patients with arthritis. The patients included in the study were 18 years old or older and able to speak, understand, and communicate verbally in Turkish. Patients had been diagnosed with arthritis at least 6 month previously were included.

Data collection:

After informed consent was obtained, each patient was interviewed for 15 to 20 minutes by the researcher in the clinic examination room or in the outpatient clinic waiting room.

Measurement instruments:

As the data gathering tools, a questionnaire form and Visual Analogue Scale for Fatigue (VAS-F) had used. The questionnaire included questions on socio-demographic information, information regarding disease and fatigue. VAS-F, which measures patients' perceived fatigue and energy, was developed by Lee et al. The scale consists of 18 items related to fatigue and energy, has simple instructions, and is completed with minimal time and effort. Its internal consistency reliabilities are high[21]. The validity and the reliability of the Turkish version of VAS-F was established by Yurtsever&Bedük[22].

Data analysis:

For the analysis of data, statistical methods such as; percentage, arithmetical mean, independent sample t test, one way-anova analysis, Chronbach's α for internal consistency test, LSD post hoc test had been used.

Ethical considerations:

Because the hospital director's approval is enough to carry out the descriptive studies in the hospital, the study was approved by the director of the hospital. The participants were informed about the aim and method of the study; they were told that their participation was voluntary, and that they have the right to withdraw at any point. Participants were told that all information would be kept strictly confidential.

Results

Sample characteristics: The mean age of the patients was 51.98 years (SD 14.73), 73.2 % of them were females, 69.2 % were married, and 29.6 % were primary school graduates. Most of the participants had described their income as "income = expenditure" (44.0 %) according to self-report of participants (Table 1).

Disease related variable of the participant: Diagnoses included 116 of osteoarthritis (46.4 %), 76 of rheumatoid arthritis (30.4 %), 58 of such as ankylosing spondilitis, fibromyalgia, gout, systemic lupus erythematosus other arthritis types (23.2 %). The frequency duration of disease was 1-5 years (45.6 %). Most of the subjects had referred musculoskeletal pain (92.4 %). Forty four participants were deformity in their joints (17.6 %). The majority reported that they were not following special diet (76.8 %) and exercise program (82.0 %) related to disease (Table 2).

Table 1. Socio-demographic Variables to the Visual Analogue Scale for Fatigue (VAS-F) in individuals with arthritis

Socio-demographic variables (n=250)	n (%)	VAS-F Point Averages	
		Fatigue $\bar{X}\pm SD$	Energy $\bar{X}\pm SD$
Gender			
-Female	183 (73.2)	76.17±29.70	15.43±12.45
-Male	67 (26.8)	59.25±29.08	22.05±12.44
		t= 4.011 p<0.001	t= -3.725 p<0.001
Age			
-16-40	60 (24.0)	67.25±27.00	18.75±13.21
-41-65	142 (56.8)	69.50±31.81	18.28±12.97
-66-90	48 (19.2)	83.45±27.77	12.10±10.31
		F= 4.735 p<0.01	F= 4.932 p<0.01
Marital Status			
-Married	173 (69.2)	68.96±30.68	18.04±12.55
-Unmarried	38 (15.2)	73.68±31.62	19.78±14.56
-Widowed	39 (15.6)	81.51±26.30	11.02±9.97
		F= 2.849 p>0.05	F= 5.942 p<0.01
Education level			
-Literate	106 (42.4)	84.00±28.75	12.97±12.30
-Primary school	74 (29.6)	74.05±25.72	15.75±10.17
-Secondary school	17 (6.8)	60.23±28.09	24.05±12.15
-High school/University	53 (21.2)	47.20±24.90	25.52±12.59
		F= 22.993 p<0.001	F= 15.703 p<0.001
Economic level			
-Income > expenditure	55 (22.0)	88.25±29.80	12.40±14.45
-Income = expenditure	110 (44.0)	65.83±28.32	19.51±11.83
-Income < expenditure	85 (34.0)	68.40±29.93	17.34±12.03
		F= 11.593 p<0.001	F= 5.930 p<0.01

Assessment of fatigue: In this study, internal consistency for VAS-F was good for arthritis individuals. Cronbach's alpha of fatigue subscale was 0.87 and energy subscale was 0.84.

A statistically significant difference were found between fatigue subscale and gender (t= 4.011, p<0.001), education level (F=22.993, p<0.001), economic level (F= 11.593, p<0.001), age (F=4.735, p<0.01), presence of deformity in joints (t=2.127, p<0.05), presence of a special exercise program for the disease (F= 3.079, p<0.05). There was a significant difference between energy subscale and gender (t= -3.725, p<0.001), education level (F= 15.703, p<0.001), age (F= 4.932, p<0.01), marital status (F= 5.942, p<0.01), economic level (F= 5.930, p<0.01), presence of a special exercise program for the disease (F= 7.455, p<0.01). As a result of the LSD post hoc test, a statistically

Table 2. Disease-related Variables to the Visual Analogue Scale for Fatigue (VAS-F) in Individuals with Arthritis

Disease-related variables (n=250)	n (%)	VAS-F Point Averages	
		Fatigue $\bar{X}\pm$ **SD**	**Energy** $\bar{X}\pm$ **SD**
Arthritis type -Osteoarthritis -Rheumatoid arthritis -Other (ankylosing spondilitis, fibromyalgia and gut etc.)	 116 (46.4) 76 (30.4) 58 (23.2)	 71.94±28.13 73.77±35.58 68.22±27.62	 16.84±11.79 16.61±13.97 18.72±13.08
		F= .557 p>0.05	F= .535 p>0.05
Disease duration -6 months to 1 year -1 to 5 years -6 to10 years -11 years and above	 32 (12.8) 114 (45.6) 51 (20.4) 53 (21.2)	 59.87±30.07 72.89±31.58 71.82±27.44 75.86±29.89	 22.71±12.12 16.67±13.13 16.74±11.56 15.49±12.92
		F= 2.026 p>0.05	F= 2.436 p>0.05
Continuous Pain Complaint -Present -Absent	 231 (92.4) 19 (7.6)	 70.67±30.29 83.36±30.38	 17.57±12.69 12.84±13.17
		t= -1.755 p>0.05	t= 1.556 p>0.05
Deformity in joints -Present -Absent	 44 (17.6) 206 (82.4)	 80.43±29.76 69.76±30.30	 14.04±10.27 17.88±13.16
		t= 2.127 **p<0.05**	t= -1.821 p>0.05
A special diet for the disease -Not following -Following -Following sometimes	 192 (76.8) 47 (18.8) 11 (4.4)	 71.55±31.06 73.12±25.68 66.81±39.25	 17.01±12.87 17.89±12.55 17.81±12.82
		F= .194 p>0.05	F= .103 p>0.05
A special exercise program for the disease -Not following -Following -Following sometimes	 205 (82.0) 17 (6.8) 28 (11.2)	 73.85±31.00 60.58±16.19 62.14±30.19	 15.83±12.05 25.82±8.59 22.07±16.60
		F= 3.079 **p<0.05**	F= 7.455 **p<0.01**

significant differences in the levels of fatigue and energy were found between the groups ($p<0.001$, $p<0.01$, $p<0.05$). It was found that the individuals between the ages of 66-90 were more fatigued and less energetic than the ones between 16-40 and 41-65 ($p<0.01$). Widowed individuals were more fatigued and less energetic than married individuals ($p<0.01$). Literate individuals were more fatigued than the others ($p<0.001$). In this respect, a statistically significant difference between primary school individuals and secondary school individuals and between secondary school individuals and high school/university individuals was not found ($p>0.05$). It was determined that the individuals with more income were less fatigued and more energetic than the other groups ($p<0.001$). A statistically no significant difference in the levels of fatigue and energy was found among the groups suffering from different types of arthritis ($p>0.05$). Fatigue appeared less problematic for individuals who had been arthritis for 6 months-1 year. These individuals were also more energetic than the individuals having been suffering from arthritis for 1 to 5 years, 6 to 10 years, and 11 years and above. A statistically significant difference between fatigue and energy subscales and a special diet for the disease was not found ($p>0.05$). Fatigue and energy levels were the same in three groups. A statistically no significant difference fatigue was found among the groups carrying on with special exercise programs regularly, partly or none ($p>0.05$). In terms of being energetic, statistically significant difference was found between the individuals carrying on with exercise programs regularly and none ($p<0.01$) and between the ones carrying on with exercise programs regularly and partly ($p<0.05$). However, in this study, it was found that there was no association between VAS-F point averages and pain ($p>0.05$). Statistically significant difference between fatigue and deformity in joints was found ($p<0.05$). (Table 1,2).

The majority stated that they were continuous fatigue (62.8 %). Two hundred nine participants reported that had increased them fatigue by movement. The most commonly symptoms of fatigue were weakness, discomfort, sleepiness, anger, and cry for which participants were referred (Table 3).

Table 3. Fatigue-related Variables of in Individuals with Arthritis

Acute period of fatigue	**Count**	**%**
-Always	157	62.8
-Morning	46	18.4
-Evening	27	10.8
-Noon	10	4.0
-Night	10	4.0
Factor to improve fatigue		
-Movement	209	83.6
-Pain	170	68.0
-Cold	39	15.6
-Stress	32	12.8
Emotion in fatigue		
-Weakness	231	92.4
-Discomfort	118	47.2
-Sleepiness	99	39.6
-Anger	63	25.2
-Cry	20	8.0

*More than one answer. Percentage was taken accepting n as 250.

Discussion

When the literature was examined it was seen that VAS-F scale results pointed out high scores for rheumatoid arthritis patient group in the original studies of Belza[12], Wolfe[18], Belza et al.[19], and Wolfe et al.[23]. In addition, when the VAS-F was used for haemodialysis patients in Turkey the values were fatigue subscale 0.90, energy subscale 0.74[22]. In this study, cronbach's alpha values were fatigue subscale 0.87 and energy subscale 0.84, and indicate that the VAS-F in Turkish shows high internal consistency and homogeneity.

Belza et al.[19] and Huyser et al.[24] found that gender was related to fatigue. These studies show that female patients were more fatigued than male patients. In this study, it was found that there was a strong association between fatigue subscale and gender and the average fatigue level of female participants was higher than male participants. This supposition is supported by the findings from earlier studies[19,24]. However, Repping-Wuts et al.[17] was not able to determine a relationship between gender, age and the severity of fatigue in 150 patients with rheumatoid arthritis. In this study, it was found that the individuals between the ages of 66-90 were more fatigued and less energetic than the other groups. Sale et al.[25], Machado et al.[26], Haas et al.[27] found that among older adults with OA, the prevalence of fatigue is high. Widowed individuals were more fatigued and less energetic than married individuals. This might be the result of the fact that the widowed individuals have less social and family support. Literate individuals were more fatigued than the others. The reason for this might be the fact that the literate individuals are less capable of coping with fatigue. It was determined that the individuals with more income were less fatigued and more energetic than the other groups. This might be the result of the fact that the economic level improves the quality of life. This findings show that the predictors of decreased fatigue and increased energy were higher levels of education and economic.

Another similarity in this study, compared with others[12,19,28] is that there was no association between VAS-F point averages and disease related variables (arthritis type, disease duration, continuous pain complaint, presence of a special diet for the disease). The rheumatoid arthritis individuals reported greater levels of fatigue osteoarthritis compared to the and such as ankylosing spondilitis, fibromyalgia, gout, systemic lupus erythematosus other arthritis types, in our study. A relationship between fatigue and disease duration was not found that result may be because of patients in this study had low disease duration (mean 6.90 years). Participants with lower average levels of pain reported greater fatigue. However, Belza[12], Belza et al.[19], Zautra et al.[7], Wolfe et al.[15], Stone et al.[20], Huyser et al.[24], Tack[29] Crosby[30], and Pollard et al.[31] founds that there was association between VAS-F point averages and pain. This might be the result of the little number of the individuals having been suffering from arthritis pain. A statistically significant difference between fatigue and energy subscales and a special diet and exercise program for the disease was not found. However, diet and exercise were associated energy-fatigue[27,32]. This might be the result of the number of the individuals following the special diet strictly and partly being less than the ones following no special diet and carring on with special exercise programs regularly and partly. In this study was found that movement was improvement in the fatigue level of individuals. According to CBS News, Australian researchers reviewed 11 studies on exercise and

fatigue. The studies included more than 400 patients with rheumatoid arthritis, lupus, and multiple sclerosis. In 6 of the 11 studies, there was significant improvement in the fatigue level of patients[33]. This study suggests that weakness, discomfort, sleepiness, anger, cry were symptoms of fatigue in arthritis patients. Most adults with rheumatoid arthritis experience sleep disturbances, including longer times before falling asleep, numerous awakenings during the night, and early morning wakening, resulting in excessive daytime sleepiness and fatigue[11,34].

The results of this study provide information about what complaint of fatigue in providing nursing care for arthritis. If nursing care acknowledges that fatigue in arthritis occur together and bases interventions on that knowledge, it may benefit the patients more effectively. In Turkey, it is rarely nursing research related to arthritis. It is limited the participation to scientific assembly and congress of nurses for this area. This condition results in that nurses for caring to patients with arthritis is not get out except general nursing care. Namely, individuals with arthritis are not often receiving specific rheumatic care from nurses.

This study has a number of limitations. First, the definition of arthritis is broad; there is no way to distinguish different types of arthritis included in the criterion question. It is likely that each of the conditions mentioned in the question would lead to slightly different fatigue because of disease differences. Second, the study included only the arthritis patients in the physiotherapy and immunology policlinics and clinics, excluding those in other policlinics and clinics. In addition, the study sample was small and the patients with different dialects in this region were excluded because they had difficulties speaking Turkish fluently and clearly. Therefore, the aforementioned findings may have limited generalizability. Despite these limitations, this study contributes to the literature on the fatigue in individuals with arthritis. This research alerts researchers and health care providers alike to the varying manifestations of fatigue in arthritis. As far as is known, it is the first survey of determining fatigue in individuals with arthritis in Turkey.

Conclusion

The importance of assessing fatigue in arthritis is confirmed. These data on the complexity of fatigue experiences will help health professionals design measures, interventions, and self-management guidance. Health care providers should determine what fatigue their and provide education on the evidence-based efficacy both patients and their families. Nurses dealing with arthritis individuals should constantly incorporate their konwledge about the changes in individuals' self-care requirements into their clinic and rehabilitation plans.

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