Original Article

Pain Levels in Female Patients with Fibromyalgia and Affecting Factors

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Abstract

Purpose: This study aims to determine factor affecting and pain levels the female patients with fibromyalgia.
Material and Methods: This descriptive and cross-sectional study was conducted between 15.05.2015 and 15.09.2015 with 104 female participants who had been diagnosed with fibromyalgia. Socio-demographic characteristics were measured by a questionnaire while a quantitative pain scale ranging from 0 to 10 (0=No Pain, 10= Severe Pain) was administered in order to determine pain levels. After ethical board approval was granted, the data were analyzed using descriptive statistics, one-way ANOVA, independent-samples t-test and Pearson correlation.
Findings: Research patients had a mean age of 38,87 ± 9,95. Demographic characteristics and the percentages of respondents in them were as follows: elementary school graduation, 48,1%; unemployment, 66,3%; middle-income, more than 50%; overweight/obesity, 51,9% (10 obese patients); non-smokers/ex-smokers, 63,5%. Besides, 31,7% of fibromyalgia patients were suffering also from another disease and 37,5% had been diagnosed fibromyalgia at least for five years. Almost all patients were experiencing pain and the mean pain level was 5,62±2,15. The findings indicated no effects of education, income, and smoking status of female patient with fibromyalgia on their pain levels ($p>0,05$). On the other hand; unemployment, comorbidity, extended family, overweight/obesity, and the duration of disease (five and more years) were found to have statistically significant effect on higher levels of pain ($p<0,05$). Age, Body Mass Index (BMI), and marital duration have statistically significant weak positive relationship with pain level ($p<0,05$).
Conclusion: The findings evinced that almost all patients were suffering from pain and age, employment status, family type, BMI, overweight/obesity, marital duration, and disease duration effect pain levels.

Keywords: *Fibromyalgia, Pain, Factors Affecting*

Introduction

Fibromyalgia syndrome (FMS) is a common chronic syndrome of non-inflammatory musculoskeletal pain that is characterized by observation of tender points at physical examination and the absence of specific clinical findings (Bennet, 1997; Clauw&Beary, 2004).

The prevalence of FMS displays a percentage change of 2-5,5 (Wolfe et al., 1995; White et al., 1999; Topbas et al., 2005; Lawrance et al., 2008; Santos et al., 2010). Although etiology is not precisely known, it is believed that neuroendocrine dysfunctions, central pain, sensitivity, trauma, sleeping disorder, infection,

stress, physical deconditioning, and several environmental factors have effects (Staud, 2004; Inanıcı, 2011).

The occurrence of FMS is likely at any society, age, or gender, yet, 30-60-year-old women are more likely to suffer from the disease (Ozkan, 2017). Being a woman, low-income, and education seem to be among primary factors increasing the rate of its incidence (Makela&Heliövaara, 1991).

Widespread pain, headache, fatigue, morning stiffness, swelling sensation at soft tissues, sleeping disorders, Raynoud's phenomenon, weakness, anxiety, dysmenorrhea, spastic colon, restless legs syndrome are clinical findings of FMS (Inanıcı, 2011, Genc &Tur, 2014).

Research has shown that one of the most common symptoms is pain (Nas et al., 2001, Hayta et al., 2010). The most important manifestation of the disease is chronic pain that is extensively observed at musculoskeletal system. Pain is felt often neck, waist, shoulder, and lower extremity (Inanıcı, 2011).

Chronic pain of patients effects their behaviors and cognition and leads them to give various reactions in order to stop the pain (Aslan, 2011). Although the effects of pain depend on socio-demographic and economic variables (Kocoglu& Ozemir, 2011) researches shown that depression, anxiety, self-respect, and decreased quality of life are related to pain (Sayar et al.,2001; Evren et al., 2005; Dundar et al., 2009; Tutuncu& Gunay, 2011).

Like all chronic diseases, fibromyalgia is the most significant factor influencing patient's life-quality. Each patient has a different pain level that is influenced by various factors. Determination of pain level and its causes enables an effective disease management and a sustainable high-quality healthcare. Thus, this study seeks to find the pain levels experienced by female patients with fibromyalgia and reveal the factors leading to these pain levels.

Material and Methods

This descriptive and cross-sectional study was conducted with 104 women who had been admitted to the Sakarya University Training and Research Hospital and rheumatology clinics and diagnosed with fibromyalgia according to the 1990 Classification Criteria endorsed by the American College of Rheumatology (ACR).

After a thorough literature search, the researchers constituted a questionnaire to measure socio-demographic and disease characteristics of the patients. In addition, they used Quantitative Pain Scale in order to determine the existence and the levels of pain. The patients were asked to rate their pain level on a scale from 0 (No Pain) to 10 (Severe Pain) (Aslan 2002).

Before the research, the institutional approval by the Training and Research Hospital of the University of Sakarya and the permission from the Ethics Board of the Medical Faculty of the University of Sakarya were granted. Based on voluntary participation, patients were selected according to the research criteria and given verbal information about the purpose and benefits of the research.

All patients gave their informed consents. The researcher collected data by one-to-one interview and analyzed them by using descriptive statistics, one-way ANOVA, independent-samples t test, and Pearson correlation test.

Results

The average patient age is 38,87 ± 9,95. The findings show that 48,1% of patients are graduated from elementary school, 66,3% are unemployed, more than half of them have middle-income, 51,9% are overweight/obese (10 obese patients); 63,5% are non-smokers/ex-smokers. Comorbid patients constitute 31,7% of the whole sample and 37,5% of all patients had been diagnosed with fibromyalgia at least for five years. Almost all patients were experiencing pain and the average of pain level was found as 5,62±2,15 (Table 1).

Our findings indicated no significant effects of education, income, and smoking status of female fibromyalgia patients on pain levels ($p>0,05$). Unemployment, comorbidity, extended family, overweight/obesity, and the duration of disease (five and more years) entail significantly more pain ($p<0,05$) (Table 2). There is statistically significant weak positive relationship between pain level and Age ($r=0,325$, $p=0,001$), Body Mass Index (BMI) ($r=0,279$, $p=0,04$), and marital duration ($r=0,310$, $p=0,001$) (Not shown at the table).

Table 1. Demographic Characteristics of Women with Fibromyalgia (n=104)

Descriptive Statistics		n	%
Age (Avg ± SD)	38,87 ± 9,95		
Education	Elementary	50	48,1
	High School	31	29,8
	Graduate	23	22,1
Employment Status	Employed	35	33.7
	Unemployed	69	66.3
Income	High	31	29,81
	Medium	61	58,65
	Low	12	11,54
Family Structure	Nuclear	90	86,5
	Extended	14	13,5
BMI (Avg ± SD kg/m^2)	25,00 ± 3,56		
BMI Classification	Thin/Normal weight	50	48,1
	Overweight/Obese	54	51,9
Smoking Status	Smoker	38	36,5
	Non-smoker/Ex-smoker	66	63,5
Comorbidity	Yes	33	31,7
	No	71	68,3
Duration of Disease	0-1 year	35	33,7
	2-5 years	30	28,8
	5+ years	39	37,5
Pain Existence	Yes	101	97,1
	No	3	2,9
Pain Level (Avg ± SD)	5,62±2,15		

Table 2. Pain Levels of Women with Fibromyalgia According to Demographic Characteristics (n=104)

Characteristics	Pain Level Avg ± SD		
Education			
Elementary (50)	5,82±2,08		
High School (31)	5,35±2,36	F=0,470	p=0,626
Graduate (23)	5,52±2,06		
Employment Status			
Employed (35)	4,74±1,70	t=-3,341	**p=0,001**
Unemployed (69)	6,06±2,23		
Income			
High (31)	5,48±199		
Medium (61)	5,66±2,21	F=0,091	p=0,914
Low (12)	5,75±2,42		
Family Structure			
Nuclear (90)	5,42±2,12	t=-2,373	**p=0,019**
Extended (14)	6,86±1,99		
BMI Classification			
Thin/Normal weight (50)	4,96±2,05	t=-3,115	**p=0,002**
Overweight/Obese (54)	6,22±2,08		
Smoking Status			
Smoker (38)	5,21±1,93	t=-1,322	p=0,189
Non-smoker/Ex-smoker(66)	5,79±2,27		
Comorbidity			
Yes (33)	6,55±2,39	t=2,873	**p=0,006**
No (71)	5,18±1,89		
Duration of Disease			
0-1 year(35)	4,83±1,74		
2-5 years (30)	5,63±2,47	F=4,673	**p=0,011**
5+ years (39)	6,31±2,03		

F: One-Way ANOVA, t: Independent-Sample T Test

Discussion

Many studies have shown that FMS- induced chronic pain and the disease itself reduce quality of life and lead to depression, anxiety, and sleeping disorder (Sayar et al., 2001; Evren et al., 2005; Dundar et al., 2009; Tutuncu&Gunay, 2011; Inanıcı, 2011; Genc&Tur, 2014). Evaluation of FMS-induced pain and determination of its causes are important in order to reduce problems related to pain. Therefore, this study aims to reveal pain levels and its causes. The average pain level in this study is 5,62±2,15 which, is also consistent with the findings of several other studies (Consoli et al., 2012; Dailey et al., 2016; Demirbag&Bulut, 2018; Racine et al., 2018). The findings demonstrate no effect of education, income level, and smoking status on pain level. On the contrary, Kocoglu and Ozdemir (2011) state that elementary or lower level of education and low income effect pain level. Tanriverdi and colleagues (2009) advocate same relationships addressing their own findings. The reason for the different results of our study may be that other studies have been conducted in different groups. Although some studies find a relationship between smoking and pain (Brage&Bjerkedal, 1996; Vieira, Kumara &Narayana, 2008), some others show otherwise supporting our findings (Altinel et al., 2008; Albayrak et al., 2010).

Advanced age leads to increase in diseases and related prevalence of pain (Ozturk&Karan, 2009). Prevalence within the elder and adult population ranges from 38.8% to 63.7% (Erdin et al., 2001; Yu et al., 2006; Kocoglu&Ozdemir, 2011). Like several other studies, our study has found a significant positive relationship between age and pain level (Thomas et al., 2004; Kocoglu&Ozdemir, 2011).

Overweight and obese individuals have musculoskeletal pain more frequently than normal weight persons (Heo et al., 2003; Turgut et al., 2014). Neumann and colleagues (2008) find that excessive weight increase pain sensitivity at patients with FMS. Similarly, Yılmaz et al. (2013) show that obesity increases the number of tender points. Our study has obtained similar results that overweight/obese patients have higher pain level. However, in their study, Okifuji et al. (2009) found no significant relationship between obesity and pain.

Our study shows comorbid patients have higher levels of pain. In the same way, there are studies demonstrating that patients with chronic diseases have high prevalence of pain (Erdin et al., 2001; Tanriverdi et al., 2009).

Our findings also indicate that patients who, was diagnosed at least five years ago, suffer from more severe pain. Similarly, Sonmez et al. (2015) find a positive correlation between duration of disease and pain level.

Both this study and several others confirmed that unemployed and retired patients have high pain levels (Chung&Wong 2007; Tanriverdi et al., 2009; Ayvat et al., 2011).

Family structure appears to be another factor effecting pain. Since patients from extended families have to care about more family members and take on more roles, possibly, they experience more severe pain. Pain can lead to both disruption of patient-family relationship and patient's experience of role conflict which, in turn, may effect pain levels (Bahar, 2007; Berk&Bahadır, 2007).

Conclusion and Suggestions

We conclude that socio-demographic characteristics effect partially the pain level at female patients with FMS. Overweight/obesity, comorbidity, and duration of diagnosis (five and more years) are related with pain level.

Pain is an important health problem since it limits daily life activities, induces psychological problems e.g. anxiety and depression, and leads to loss of labor force. Thus, a comprehensive understanding of pain inducing factors provides coping with pain effectively.

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