



## The Quality of Life Level in Female Patients with Fibromyalgia Syndrome and the Associated Factors

*Fibromiyalji Sendromlu Kadın Hastalarda Yaşam Kalitesi Düzeyi ve İlişkili Faktörler*

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### Abstract

**Objective:** In our study, we were examined the quality of life and its relationship with socio-demographic characteristics in female patients with Fibromyalgia syndrome (FMS) who applied to outpatient clinic.

**Materials and Methods:** In the study, 108 female patients applying to physical therapy outpatient clinic between May 1, 2017 and September 1, 2017, and diagnosed with FMS were included. The data collection tool used in the study was the questionnaire developed by the researcher based on the literature information. The questionnaire consisted of two parts. The first part of the form consisted of the question set querying the socio-demographic characteristics (15 questions), and the second part consisted of the quality of life bref scale used to assess the quality of life of the cases.

**Results:** When the quality of life scores of the individuals according to their economic status were examined; the emotional role functioning, physical functioning, physical role functioning, and physical indicator scores of individuals with middle income level were significantly higher than other income groups ( $p<0.05$ ).

**Conclusion:** Consequently, we can say that the quality of life is better in female patients who have a high income level with education, normal body mass index, regular sleeping and diagnosis of fibromyalgia.

**Keywords:** Fibromyalgia, quality of life, clinical characteristics

### Öz

**Amaç:** Çalışmamızda, polikliniğe başvuran Fibromiyalji sendromlu (FMS) kadın hastalarımızda yaşam kalitesini ve yaşam kalitesinin sosyo-demografik özellikler ile ilişkisini inceledik.

**Gereç ve Yöntem:** Çalışmada, 1 Mayıs 2017 - 1 Eylül 2017 tarihleri arasında fizik tedavi polikliniğine başvuran ve FMS tanısı alan 108 kadın hasta alındı. Araştırmada kullanılan veri toplama aracı literatür bilgilerine dayanarak araştırmacı tarafından geliştirilen anket formudur. Anket formu, iki bölümden oluşmaktadır. Formun birinci bölümü sosyo-demografik özellikleri sorgulayan soru takımından (15 soru), ikinci bölümü ise, olguların yaşam kalitesini değerlendirmek için kullanılan yaşam kalitesi kısa ölçeğinden oluşmuştur.

**Bulgular:** Bireylerin ekonomik durumlarına göre yaşam kalitesi puanları incelendiğinde; orta gelir düzeyine sahip olan bireylerin emosyonel rol gücü, fiziksel fonksiyon, fiziksel rol gücü ve fiziksel göstergeler skorları diğer gelir gruplarına göre anlamlı derecede yüksektir ( $p<0,05$ ).

**Sonuç:** Sonuç olarak; eğitim ile gelir düzeyi yüksek olan ve beden kitle indeksi normal olup, düzenli uyuyan fibromiyalji tanısı alan kadın hastalarda yaşam kalitesinin daha iyi olduğunu söyleyebiliriz.

**Anahtar kelimeler:** Fibromiyalji, yaşam kalitesi, klinik özellikler

### Introduction

Fibromyalgia is a disease characterized by widespread chronic musculoskeletal pain. Peripheral and central pain mechanisms are thought to have a role in genetic basis at fibromyalgia etiopathogenesis (1). The etiology and mechanisms of Fibromyalgia syndrome (FMS) are not exactly understood, however, central pain mechanisms and central sensitization as well as neuroendocrine dysfunctions are the most important

factors in the development of FMS (2). Fibromyalgia affects 1-2% of the community and most of them are female patients aged between 40-55 years (3,4). The quality of life briefly defines "how the person perceives his/her own health subjectively in the environment he/she is in". This concept is not a quantity measured by medical techniques and laboratory processes, but it is a quality experienced subjectively. The quality of life is multidimensional and the criteria used are affected by the disease itself and its severity. The quality of

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**Received/Geliş Tarihi:** 22.02.2018 **Accepted/Kabul Tarihi:** 09.07.2018

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Turkish Journal of Osteoporosis published by Galenos Yayınevi.

life is an important measure in the effect, treatment and follow-up process of the chronic diseases such as rheumatic disease on a person. One of these diseases is FMS (5). FMS disturbs the physical and emotional quality of life by causing significant difficulties in the person's functional capacity and activities of daily living. For this reason, the quality of life scales are often used. The scales developed to measure quality of life include physical and occupational functions, social interaction, psychological and economic conditions. Numerous scales used for this purpose are involved in the literature and among them the scale which is most frequently used in the health researches is "the quality of life scale" which has 36 questions and 8 subscales short form-36 (SF-36) (6). Being widely used in Turkey and in the world in order to measure the quality of life, the SF-36 evaluates the health status with its positive and negative aspects. The high scale score signifies a good quality of life (7). Determining the factors affecting the quality of life in FMS seems important at the stage of directing the treatment of the disease. In the present study, the quality of life of female patients with FMS applying to outpatient clinic and the correlation between the quality of life and socio-demographic characteristics were examined.

## Materials and Methods

Necessary written permissions were obtained from related institutions before the study. A total of 108 female patients who applied to the Bingöl State Hospital Physical Medicine and Rehabilitation outpatient clinic that diagnosed of FMS according to 1990 American College of Rheumatology FMS classification criteria and filled out of informed voluntary consent were included in this study. The study was performed in accordance with the principles of Declaration of Helsinki. The ethical approvals were taken from Bingöl University Scientific Research Publications Ethics Committee (dated 09.05.2016 and numbered 29). All participants gave written and verbal permission to participate in this study. The sample of the study consisted of the patients who were followed-up with the diagnosis of FMS, were able to communicate and were voluntary to participate in the study. Patients whose complete blood count, complete urine test, sedimentation rate and serological tests (Syphilis, Brucella, Hepatitis markers, human immunodeficiency virus) were in the normal limits and who had no significant systemic disease were included in the study. In addition, attention was paid so that all the cases included in the study had no additional disease like systemic and inflammatory diseases. The data collection tool used in the study was the Questionnaire developed by the researcher based on the literature information. The questionnaire consisted of two parts. While the first part of the questionnaire consisted of a question set checking the socio-demographic characteristics (15 questions), the second part was the quality of life scale (SF-36) used for evaluating the quality of life of the cases. It is a widely used quality of life measure and has high reliability (8). It is not

only intended for a single disease but also it can be used for all chronic diseases. Therefore, in the present study investigating the female patient group with FMS, the use of SF-36 was preferred in evaluating the quality of lives of the patients.

## Statistical Analysis

The data were prepared for analysis on SPSS, Version 22.0 following export from Qualtrics. Mean scores were given with standard deviation and the value of  $p < 0.05$  was determined as significance level. Frequency was benefited in presentation of the descriptive data, while Kruskal-Wallis Variance analysis from nonparametric hypothesis tests used to compare more than two groups was used in the evaluation of statistical significance of the other data.

## Results

Table 1 shows the general characteristics of the individuals participating in the study. The majority of the individuals were illiterate (28.7%), had a middle income level (75.9%), and were mostly housewives (49.1%). 45.4% of the individuals did not smoke and reported the disease as the event affecting their life (24.1%). In addition, it was also found that 76.4% of them had irregular sleep and 60.2% had no illness. When the status of having a psychological disease was examined, 86.1% of them were observed to have no disease. A great majority of the patients received physical therapy (43.5%) and physical therapy+medication together (39.8%). Table 2 shows the distribution of scores of the life quality according to educational status. According to this, all the quality of life components other than general health were higher in the individuals whose educational level was university than individuals in the other educational levels and it was statistically significant ( $p < 0.05$ ). The general health component was significantly lower in illiterate individuals than other groups ( $p < 0.05$ ); this score of the other groups was close to each other.

When the quality of life scores of the individuals according to their economic status were examined (Table 3); the emotional role functioning, physical functioning, physical role functioning, and physical sign scores of individuals with middle income were significantly higher than other income groups ( $p < 0.05$ ). The pain score was found to be higher in the individuals with high income than the other groups and it was statistically significant ( $p < 0.05$ ). Table 4 shows the distribution of quality of life scores according to body mass index (BMI) groups. According to this, a significant difference in terms of BMI groups was seen only in the physical role functioning component ( $p < 0.05$ ). Physical role functioning score of obese individuals was significantly lower than others. Table 5 shows the distribution of mean and standard deviation values of the quality of life scores according to the sleep pattern. While no significant correlation was found between the sleep pattern and physical signs except for physical role functioning score; whereas, the difference between the vitality and mental health from mental signs and total mental sign scores was significant. The physical role functioning score

<b>Table 1. Distribution of individuals in terms of their socio-demographic characteristics (%)</b>		
<b>Characteristics</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
<b>Educational status</b>		
Illiterate	31	28.7
Primary school	28	25.9
Secondary school	18	16.7
High school	9	8.3
University	22	20.4
<b>Economic status</b>		
Low	22	20.4
Middle	82	75.9
High	4	3.7
<b>Profession</b>		
Housewife	53	49.1
Worker	6	5.6
Civil servant	20	18.5
Student	10	9.3
Retired	6	5.6
Self-employed	13	12.0
<b>Smoking status</b>		
Never	49	45.4
Sometimes	34	31.5
Addicted	25	23.1
<b>Experiencing the event that will affect your life</b>		
Death	21	19.4
Accident	5	4.6
Disease	26	24.1
Economic difficulty	7	6.5
Other	23	21.3
Disease, economic difficulty	8	7.4
Death, accident	4	3.7
Accident, economic difficulty	3	2.8
Death, economic difficulty	4	3.7
Death, accident, disease	5	4.6
Death, disease	2	1.9
<b>Sleep pattern</b>		
Regular	11	10.2
Some nights	14	13.0
Irregular	83	76.9
<b>Disease status</b>		
No	65	60.2
Yes	43	39.8

<b>Table 1. Continued</b>		
<b>Characteristics</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
<b>Disease name</b>		
Heart	14	13.0
Diabetes	2	1.9
Kidney	2	1.9
Waist, neck, joint and muscular disease	6	5.6
Heart, diabetes	8	7.4
Digestive system	4	3.7
Respiratory tract	5	4.6
Celiac	2	1.9
<b>Status of having psychological disease</b>		
No	93	86.1
Yes	15	13.9
<b>Patient</b>		
Mother	22	20.4
Father	2	1.9
My spouse	17	15.7
Parents and siblings	2	1.9
Mother father	5	4.6
<b>Treatment</b>		
Medication	10	9.3
Physical therapy	47	43.5
Other	8	7.4
Physical therapy, medication	43	39.8
<b>Duration of Fibromyalgia disease (years)</b>	<b>3.5±3.2</b>	

was higher in individuals with regular sleep than the others and it was statistically significant ( $p < 0.05$ ). While the mental health score was high in individuals sleeping irregularly at some nights; vitality score and mental signs score are significantly high in individuals sleeping regularly than the other groups ( $p < 0.0$ ).

## Discussion

All the quality of life components of the individuals, whose educational level was university, other than general health were higher than the individuals in the other educational levels and it was statistically significant ( $p < 0.05$ ). The general health component was significantly low in the illiterate ones compared to the other groups ( $p < 0.05$ ); this score of the other groups was close to each other. It was stated that FMS was seen more frequently especially in those who were female, had low educational level, and had low socio-economic level (9,10). The effect of low educational level may be interpreted

as not only being a stress factor but also affecting coping strategies, causing somatization to be used more by reducing the expression of emotions. When the quality of life scores of the individuals in terms of their economic levels were examined; emotional role functioning, physical function, physical role functioning and physical sign scores of the individuals with moderate income level were significantly higher than the other income groups ( $p < 0.05$ ). The pain score on the other hand was higher in the individuals with high income compared to the other groups and this was statistically significant ( $p < 0.05$ ). In a previous study, female gender, middle age, low educational level, low family income and being divorced in patients with fibromyalgia were reported to be the risk factors for Turkey (11). Lower educational levels, income levels, and future concerns may have caused adverse effects on the quality of life

and psychological status of individuals. Giving nutrition training and performing the diet follow-up for individuals diagnosed with FMS and enabling them to acquire a physical activity habit gain importance (12). In a study conducted in the United States of America to determine the overweight and obese prevalence in female patients diagnosed with FMS, obesity prevalence of the patients diagnosed with FMS (61%) was higher than the obesity prevalence (38%) in the society (13). According to results of the present study; significant difference according to the BMI groups of the female patients participating in the study was only seen in the physical role functioning component ( $p < 0.05$ ). Physical role functioning scores of the obese individuals were significantly low compared to the others. In the literature, it was determined that the quality of life in overweight and obese patients diagnosed with FMS was negatively affected

**Table 2. Distribution of mean and standard deviation values of quality of life scores according to educational status**

SF-36 components	Educational status					p value
	Illiterate (n=31)	Primary school (n=28)	Secondary school (n=18)	High school (n=9)	University (n=22)	
	(x ± SD)	(x ± SD)	(x ± SD)	(x ± SD)	(x ± SD)	
<b>Mental signs</b>	28.7±15.9	32.1±19.2	31.2±11.1	41.7±19.0	<b>53.5±17.1</b>	0.001*
Vitality	29.7±14.3	29.5±18.9	38.1±9.1	50.6±17.8	<b>50.5±19.1</b>	0.001*
Social role functioning	29.0±21.3	41.5±25.9	37.5±26.8	44.4±21.8	<b>54.5±27.4</b>	0.015*
Emotional role functioning	14.0±26.9	21.4±27.5	0.0±0.0	29.6±35.1	<b>54.5±40.6</b>	0.001*
Mental health	42.1±24.1	36.1±23.5	49.3±15.9	42.2±14.4	<b>54.5±15.9</b>	0.013*
<b>Physical signs</b>	22.4±11.6	36.4±20.7	31.1±11.1	43.0±18.9	<b>53.5±24.2</b>	0.001*
Physical functioning	25.5±19.9	41.9±19.9	39.9±22.9	51.1±8.9	<b>65.2±26.0</b>	0.001*
Physical role functioning	0.0±0.0	25.0±34.0	2.8±8.1	33.3±50.0	<b>44.3±45.6</b>	0.001*
Bodily pain	29.3±16.3	31.9±16.9	33.2±17.0	39.7±20.8	<b>55.5±21.6</b>	0.001*
General health	34.8±20.3	46.6±22.4	49.4±18.1	47.8±15.8	48.9±20.1	0.049*

Kruskal-Wallis analysis of variance was performed, \* $p < 0.05$ , SF-36: Short form-36, SD: Standard deviation, x: Mean

**Table 3. Distribution of mean and standard deviation values of quality of life scores of the individuals according to their economic status**

SF-36 components	Economic status			p value
	Low (n=22)	Middle (n=82)	High (n=4)	
	(x ± SD)	(x ± SD)	(x ± SD)	
<b>Mental signs</b>	28.6±10.5	37.9±20.5	42.2±9.7	0.150
Vitality	34.3±12.0	37.0±20.0	52.5±8.7	0.099
Social role functioning	29.5±23.9	43.1±26.4	37.5±14.4	0.076
Emotional role functioning	6.1±13.2	<b>28.0±36.4</b>	16.7±19.2	0.038*
Mental health	44.5±18.3	43.4±21.8	62.0±25.4	0.372
<b>Physical signs</b>	25.1±11.4	<b>38.4±22.2</b>	33.4±9.7	0.036*
Physical functioning	30.5±17.3	<b>45.4±26.6</b>	42.5±2.9	0.036*
Physical role functioning	2.3±7.4	<b>24.1±38.2</b>	0.0±0.0	0.026*
Bodily pain	29.0±23.9	38.0±20.7	<b>56.3±13.0</b>	0.015*
General health	38.9±21.7	46.2±20.2	35.0±23.1	0.202

Kruskal-Wallis analysis of variance was performed, \* $p < 0.05$ , SF-36: Short form-36, SD: Standard deviation, x: Mean

and their pain scores and physical dysfunction were higher (14,15). Some authors concluded that the body weight was not related with the pain (16). Most patients with fibromyalgia (75-90%) complain of non-deepening, non-restful sleep disorder. The presence of the alpha waves that should not normally be seen in delta wave sleep in the deepest phase of sleep in fibromyalgia patients causes sleep deprivation (17). Although sleep disorders are common in patients with FMS, the number of studies showing its relationship with the quality of life is limited (5). In the present study, while no significant correlation was found between the sleep pattern and the physical signs except for physical role functioning score, the difference between the vitality and mental health from mental signs and total mental sign scores was found to be significant. Physical role functioning score was found to be higher in those with

regular sleep than the other individuals and this was statistically significant ( $p<0.05$ ). While mental health score was found to be high in individuals who had an irregular sleep at some nights; vitality score and mental sign score of the individuals who slept regularly were significantly high compared to the other groups ( $p<0.0$ ). In the study by Wagner et al., (18) the quality of life of patients with sleep disorder was found to be significantly lower than those without sleep disorder. Recent studies also suggest a multidisciplinary approaches including pharmacological treatment, psychotherapy, training programs, pain and fatigue control, sleep pattern improvement, mood control, and psychosocial reintegration in FMS treatment (19,20).

**Table 4. Distribution of mean and standard deviation values of quality of life scores of the Individuals according to the body mass index**

SF-36 components	BMI classification				p value
	Underweight (n=2)	Normal (n=40)	Overweight (n=40)	Obese (n=26)	
	(x ± SD)	(x ± SD)	(x ± SD)	(x ± SD)	
<b>Mental signs</b>	<b>46.0±0.0</b>	<b>36.3±19.9</b>	<b>37.7±20.0</b>	<b>32.8±16.2</b>	<b>0.504</b>
Vitality	40.0±0.0	40.2±19.5	35.8±19.5	33.8±15.4	0.642
Social role functioning	62.5±0.0	35.6±26.6	45.3±27.8	37.5±21.1	0.218
Emotional role functioning	33.3±0.0	25.0±37.6	25.8±32.5	15.4±30.2	0.338
Mental health	48.0±0.0	44.3±20.6	44.0±22.3	44.5±22.5	0.994
<b>Physical signs</b>	<b>36.9±0.0</b>	<b>39.3±21.9</b>	<b>37.9±23.7</b>	<b>25.9±9.6</b>	<b>0.121</b>
Physical functioning	45.0±0.0	49.9±26.8	38.6±27.9	35.8±14.7	0.050
Physical role functioning	25.0±0.0	20.6±37.9	28.8±39.0	0.0±0.0	0.002*
Bodily pain	32.5±0.0	39.0±20.0	38.9±23.0	30.6±16.2	0.399
General health	45.0±0.0	48.8±23.0	45.4±18.7	37.1±20.0	0.186

Kruskal-Wallis analysis of variance was performed, \* $p<0.05$ , SD: Standard deviation, x: Mean, BMI: Body mass index, SF-36: Short form-36

**Table 5. Distribution of mean and standard deviation values of quality of life scores according to sleep pattern**

SF-36 components	Sleep pattern			p value
	Regular (n=11)	Some nights (n=14)	Irregular (n=83)	
	(x ± SD)	(x ± SD)	(x ± SD)	
<b>Mental signs</b>	<b>46.6±23.5</b>	<b>43.8±16.3</b>	<b>33.5±18.0</b>	<b>0.032*</b>
Vitality	55.0±22.2	45.4±13.9	33.2±16.8	0.001*
Social role functioning	36.4±23.4	50.0±24.5	39.0±26.4	0.459
Emotional role functioning	45.5±45.4	19.0±36.3	20.9±33.6	0.177
Mental health	49.5± <b>23.8</b>	60.9± <b>13.4</b>	40.8± <b>20.8</b>	0.002*
<b>Physical signs</b>	<b>48.8±27.6</b>	<b>33.1±17.4</b>	<b>34.2±19.9</b>	0.315
Physical functioning	47.7± <b>27.6</b>	36.1± <b>25.4</b>	42.5± <b>24.9</b>	0.346
Physical role functioning	54.5± <b>52.2</b>	10.7± <b>18.9</b>	15.4± <b>31.4</b>	0.017*
Bodily pain	42.7± <b>19.3</b>	38.2± <b>23.0</b>	35.8± <b>20.1</b>	0.437
General health	50.0± <b>19.4</b>	47.5± <b>16.0</b>	43.0± <b>21.6</b>	0.352

Kruskal-Wallis analysis of variance was performed, \* $p<0.05$ , x: Mean, SD: Standard deviation, SF-36: Short form-36

## Conclusion

Consequently, it can be asserted that the quality of life was better in female patients diagnosed with fibromyalgia who had high educational and income levels, normal BMI, and a regular sleeping. In other words, female patients with these characteristics had a better quality of life. In general, studies have revealed that education, income status, BMI and sleep quality are important and remarkable concepts.

Further studies are needed with more groups of participants to extend the results of the present study and increase the value of evidence. Thus, we think that the life quality level of women with fibromyalgia, from which sociodemographic characteristics it is affected can be more easily determined and the exact results can be demonstrated.

## Ethics

**Ethics Committee Approval:** The ethical approvals were taken from Bingöl University Scientific Research Publications Ethics Committee (dated: 09.05.2016 and numbered 29).

**Informed Consent:** All participants gave written and verbal permission to participate in this study.

**Peer-review:** Internally peer-reviewed.

## Authorship Contributions

Surgical and Medical Practices: A.B., Concept: A.B., Design: A.B., Data Collection or Processing: E.T., Analysis or Interpretation: A.B., Literature Search: E.T., Writing: A.B.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

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