





Quality of Life among Patients with Fibromyalgia Referring to the Physiotherapy and Rehabilitation Clinic of Baqiyatallah Hospital, Tehran, Iran

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Keywords

Fibromyalgia; Widespread chronic pain; Quality of life

Abstract

Background: Fibromyalgia syndrome (FMS) is a chronic musculoskeletal disorder (MSD) with unknown etiology which is recognized with the main symptoms of widespread pain throughout the body and numerous trigger points. The present study was carried out with the aim to evaluate the quality of life (QOL) of patients with FMS referred to the Physiotherapy and Rehabilitation Clinic of Baqiyatallah Hospital, Tehran, Iran.

Methods: Patients referring to the Physiotherapy and Rehabilitation Clinic were asked questions by a specialist physician regarding chronic widespread pain, fatigue, sleep disorder, age, body mass index (BMI), education level, and number of children. The SF-36 questionnaire was used in order to assess their QOL. In addition, the visual analog scale (VAS) was used to assess pain. Diagnosis of FMS was performed on the

basis of the American College of Rheumatology (ACR) diagnostic criteria by the same physician.

Results: This study was carried out on 59 patients referring to Baqiyatallah Hospital. The results of the investigation illustrated that there was a statistically significant relationship between QOL and pain ($P = 0.002$), age of the patient ($P = 0.010$), BMI ($P = 0.040$), and morning stiffness ($P = 0.001$). However, there was no significant relationship between educational level and QOL ($P = 0.090$). Moreover, given the findings, QOL was affected by FMS in all components, especially the physical components.

Conclusion: According to the findings of the study, the QOL of patients with FM was affected by several factors including widespread pain, BMI, age, and morning stiffness.

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Introduction

Fibromyalgia syndrome (FMS) is one of the most common musculoskeletal disorders (MSDs) among adults.^{1,2} According to its definition, this syndrome consists of a series of symptoms including chronic widespread pain associated with painful points and symptoms like fatigue, sleep disorder, headache, temporal-cognitive impairment, and morning stiffness of the joints.³ It is also accompanied by other disorders, including swallowing disorder⁴ and impaired bowel and bladder function.⁵ Moreover, difficulty in breathing, tingling sensation (nondermatomal paresthesia)¹, and abnormal motor activity are sometimes observed in individuals with this disorder.⁶

Symptoms of the patient may be in the form of a widespread and chronic pain that can change location throughout the body. The severity of the symptoms is variable in patients and they have painful, tender points.³ Sometimes pain affects the axial skeleton (backache). Occasionally, symptoms such as tingling and burning sensations also afflict the patient; these symptoms are nondermatomal. FM is not a fixed condition and the severity of its symptoms is constantly changing.⁴ The severity of pain and morning stiffness is high, and factors like cold and wet weather, physical and mental tiredness, high physical activity, very low physical activity, stress, and anxiety intensify the pain.^{2,7} The symptoms of involvement in the disease include moderate or severe fatigue, prolonged muscle spasms, organ weakness, intestinal dysfunction, chronic sleep disorder, cognitive impairment as short term memory disorder and concentration problems, and symptoms of depression and anxiety. Sometimes, FM is associated with other diseases, such as chronic fatigue syndrome (CFS), and creates overlapping syndromes; in addition, this complication is sometimes accompanied by chronic pains like migraine, convulsive headaches, and temporomandibular disorders (TMD). Eye problems including eye pain, sensitivity to

light, and blurry vision are observed among patients with FM.⁵ Moreover, 10-25 percent of individuals suffering from this disease cannot perform any task and produce any volume of work, and other patients have to make changes in their jobs.⁸ In a previous study, the rate of disability has been reported as 10-30 percent.⁹

The causes of FM are still unknown. However, in various studies, factors such as genetics², stress⁶, and abnormal serotonin metabolism,¹⁰ psychological factors,¹¹ and other factors like peripheral toxins,¹² the improper response of the immune system to intestinal bacteria, and damage to neuroprotective chemicals have been attributed to this disease.¹³

The incidence of this disease in Iran is 4% according to the study conducted by Naji and Arab.⁸ It was declared in this study that the ratio of women to men was 9 to 1. In addition, 92.5% and 82.5% of the patients reported fatigue and a sleep disorder, respectively.⁸ The prevalence of this illness is estimated to be about 4% in the United States. Moreover, the prevalence of this disease increases with age, as it was found in a study carried out by Kalichman⁹ that the incidence of this disease reached 1% and 8% among women aged 18-30 and 55-64 years, respectively.⁹ Pain and physical disabilities due to FM have been reported to be equal to that of rheumatoid arthritis (RA), impairing personal and recreational activities as well as disrupting the occupational function of individuals, hence, causing a decrease in the quality of life (QOL) of these individuals.¹⁴ In a study conducted by Ofluoglu et al. in Turkey, it was found that QOL was lower among patients with FM compared to those with other diseases, such as osteoarthritis and osteoporosis, due to the low age of patients.¹² Tander et al. also found that physical pain and disability due to FM had the same severity as that of RA, and disrupted personal and recreational activities and caused impairment in occupational functioning.¹⁴ Ofluoglu et al. compared QOL

among patients with RA and FM and found that, in terms of mental health, there was a higher prevalence of complications among patients with FM in comparison to patients with RA.¹² In addition, the two diseases caused the same level of decrease in QOL and this decrease was inversely correlated with the age of the patients.¹² Considering the fact that FM is an illness that impairs patients' QOL, the present study was performed with the aim to evaluate the QOL of patients with FM referring to the Physiotherapy and Rehabilitation Clinic of Baqiyatallah Hospital, Iran, in 2010.

Methods

This cross-sectional, descriptive study was performed on 64 patients with FM who referred to the Physiotherapy and Rehabilitation Clinic of Baqiyatallah Hospital, Tehran, Iran, in 2010. Based on the study exclusion criteria, 5 patients were excluded from the study.

The presence of FM was examined using the American College of Rheumatology (ACR) criteria among patients referring to the Physiotherapy and Rehabilitation Clinic of Baqiyatallah Hospital. Then, the QOL of the patients was evaluated using the SF-36 questionnaire. Based on the ACR criteria, the inclusion criteria of the study were the presence of chronic widespread pain for more than 3 months and clear tenderness in at least 11 points out of the 18 points (Figure 1). In addition, the study exclusion criteria (5 patients excluded from the study) included diagnosis of temporal, pseudo-physical, and psychiatric disorders, suspected psychiatric disorders based on the diagnosis of a physician, severe MSDs, and lack of meeting the ACR diagnosis criteria in any way. Widespread pain means feeling pain in the right and left sides of the body as well as upper and lower back and axial skeleton including cervical spine, back spine, chest, and the lumbar area. The value of the ACR criteria has been proven in numerous demographic studies and it is highly reliable.^{3,5}

In the examination of painful points, a pressure of 4 kg/cm was exerted with a finger through touching; a pressure that caused the nail bed to whiten was considered as 4 kg. The pressure must be applied gradually within a few seconds. In this study, all patients were examined by an expert physician. The 18 ACR points for the diagnosis of FM included: anterior of the intertransverse space below the fifth to seventh cervical vertebrae (C5-C7) on both sides, the connection site of the suboccipital muscle to occiput on both sides, the middle part of the upper edge of the trapezius muscle on both sides, the origin of the super spinal muscle above the scapula spine near its middle lobe on both sides, 2 cm distal to the outer epicondyle in the elbow on both sides, the upper and outer edge of the second rib at the point of attachment of the costochondral joint on both sides, the upper and outer quadrant of the gluteal region on both sides, the posterior protuberance of the great trochanter of the knee on both sides, and the internal part of the knees on both sides (Figure 1).

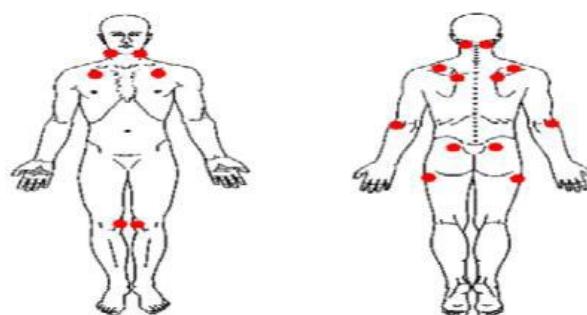


Figure 1. Eighteen areas of tenderness in patients with fibromyalgia

The study enrolment and intervention procedures were explained to the patients, and the demographic data and data regarding occupation, duration of illness, and morning stiffness were recorded. The 36-SF questionnaire was utilized to examine QOL. The 36-SF questionnaire is a self-report tool that consists of 36 items in 8 subscales including physical performance, physical role, physical pain, general health, pleasure and vitality, social function, emotional function, and mental

health. These 8 subscales can be examined in the physical and mental fields. The total score of each subscale ranges between 0 and 100 and higher scores represent higher QOL.¹² Furthermore, the visual analog scale (VAS) was used for pain assessment, so that the patient was asked to rate his/her pain intensity from 0 (painless) to 10 (the most severe form of pain). The weight of the patients in kg was divided by their height squared in m to calculate their body mass index (BMI).

Ethical considerations were observed in accordance with the rules of the ethics committee of Baqiyatallah University of Medical Sciences, Iran, and all patient information were kept strictly confidential.

The data analysis was performed using correlation test, t-test, and analysis of variance (ANOVA) in SPSS software (version 17.0, SPSS Inc., Chicago, IL, USA), and the relationship between the variables was examined.

Results

In this study, 59 women were studied and the mean age of the patients was 39.30 ± 4.20 years, with the oldest and the youngest being 60 and 23 years old, respectively. In addition, 54, 4, and 1 of the patients were married, single, and divorced, respectively. The mean BMI of the subjects was 27.7 kg/m^2 , with the highest and the lowest being 36.2 and 23.0 kg/m^2 , respectively.

In terms of educational level, 27 (45.0%), 14 (25.0%), 3 (5.0%), and 9 (15.0%) individuals had a diploma, bachelor's degree, master's degree and higher, and pre-diploma certificate, in the same order. Moreover, 6 (10.0%) of the patients were illiterate. The mean \pm standard deviation (SD) of duration of the disease was 9.20 ± 1.10 years, with the highest and the lowest disease duration being 24 years and < 1 year, respectively.

Regarding morning stiffness, 9 (15.0%), 38 (65.0%), 11 (18.3%), and 1 (1.7%) of the subjects experienced no morning stiffness, and less than 30 minutes, 30 to 60 minutes, and more than 60 minutes of morning

stiffness, respectively.

In terms of occupation, 16 (29.5%), 40 (65.5%), 1 (1.7%), and 2 (3.3%) participants were, respectively, employed, housewives, unemployed, and retired. The mean \pm SD of the QOL score was 34.40 ± 3.80 , 39.84 ± 4.40 , 43.20 ± 4.70 , and 42.00 ± 3.00 in the pre-diploma certificate, diploma, bachelor's degree, and master's degree and higher groups, respectively. Regarding pain, the mean \pm SD of the pain score was 4.25 ± 0.80 based on the VAS scale, with the highest and lowest being 8 and 0, respectively.

The mean \pm SD of the QOL score was 39.86 ± 7.40 , with maximum and minimum QOL scores of 65.83 and 13.19, respectively. Regarding the analysis of QOL and the scores obtained in the two physical and mental subscales of the SF-36 questionnaire, the mean scores in the physical function, physical role, physical pain, general health, pleasure and vitality, social function, emotional performance, and mental health subscales were 45.49 ± 9.20 , 30.13 ± 7.50 , 38.68 ± 6.50 , 50.44 ± 10.40 , 40.39 ± 8.60 , 69.31 ± 11.70 , 68.49 ± 10.10 , and 43.55 ± 6.30 , in the same order. Therefore, according to the findings of the present study, QOL was affected by FM in all subscales of the SF-36, especially in the physical subscales. In examining the relationship between morning stiffness and QOL, it was revealed that patients with morning stiffness had a lower QOL compared to those without morning stiffness. The mean \pm SD of the QOL scores were 42.20 ± 0.00 , 31.30 ± 3.80 , 29.10 ± 2.60 , and 24.30 ± 2.10 , respectively, among patients experiencing no morning stiffness, and morning stiffness lasting less than 30 minutes, 30 to 60 minutes, and more than 60 minutes. Therefore, an inversely significant relationship was observed between morning stiffness duration and QOL ($P = 0.001$); hence, the higher the duration of morning stiffness and the patient's complaint of morning stiffness, the lower the QOL. According to the correlation coefficient between the QOL and age of the patients,

there was an inversely significant correlation between these two items ($P = 0.010$, Pearson correlation coefficient = -0.665) (Figure 2).

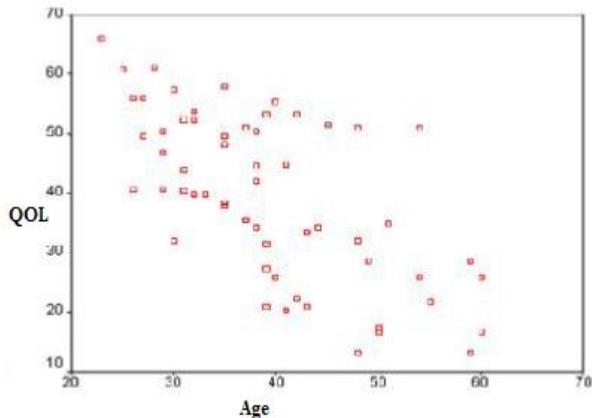


Figure 2. Relationship between the quality of life (QOL) and age of patients with fibromyalgia

In examining the relationship between QOL and educational status, no significant relationship was found between QOL and educational status ($P = 0.090$). In addition, regarding the relationship between QOL and the VAS score reported by the patients with FM, it was revealed that there was a significant relationship between these two variables; the lower the pain in these patients, the higher their QOL scores ($P = 0.002$) (Figure 3).

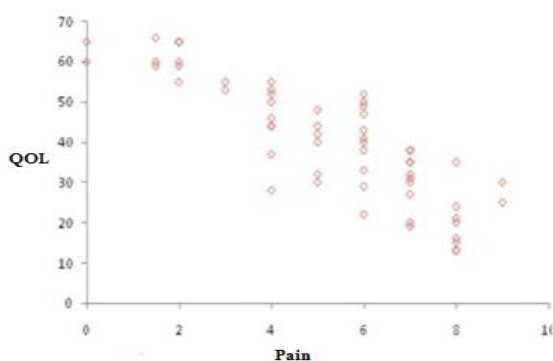


Figure 3. Relationship between pain and quality of life (QOL) among patients with fibromyalgia

Regarding the relationship of QOL with occupational status, it was specified that the mean QOL score was 49.08 ± 4.60 and 34.97 ± 5.80 in the employed and

unemployed groups, respectively, and this difference was significant ($P = 0.010$). The employed group gained higher scores in the QOL questionnaire. Moreover, in examining the relationship between BMI and QOL, it was found that the relationship between these two variables was inversely significant ($P = 0.040$). In this criterion, the mean QOL scores of individuals with the highest and lowest BMIs were 13.19 and 61.70, respectively (Figure 4).

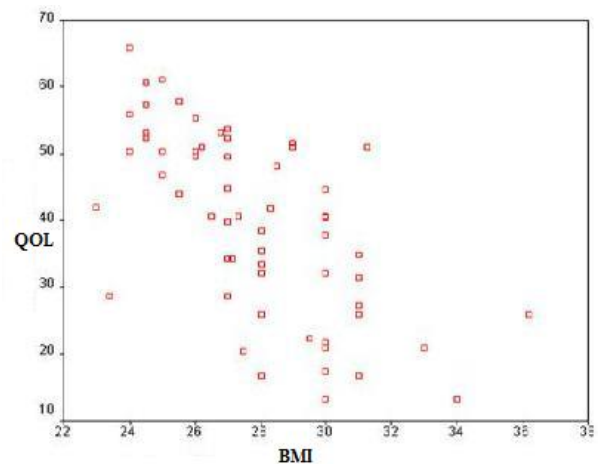


Figure 4. Relationship between the body mass index (BMI) and quality of life (QOL) of patients with fibromyalgia

Discussion

In the present industrial world, FMS is one of the most common diseases among patients referring to rheumatology centers. The incidence rate of this disorder has been reported as around 4% on average worldwide.¹ In a study conducted in Iran, the incidence of FMS has been reported to be 4%.⁸

According to the results of the present study, there was an inverse and significant relationship between the age of the patients and their QOL, i.e., the QOL of patients with FM decreased with age. In a study conducted by Ofluoglu et al., it was stated that the QOL of patients with FM had an inverse and significant relationship with age; the results of the present study and those of this study are in agreement.¹² The results can be analyzed as follows: as FM is a chronic disease, the higher the age of the patients, the

more the chronicity of the disease, thus, decreasing the QOL of the patients. Based on the results, there was no significant relationship between the QOL of patients and their level of education. However, no other studies have examined the relationship between QOL and education level in these patients; therefore, the results of the present study in this regard could not be compared with that of others. Nevertheless, in the study conducted by Naji and Arab, it was concluded that there was no relationship between the feeling of fatigue or sleep disorder and the level of education among individuals with FM.⁸ The results indicated that there was a significant relationship between pain and QOL in these patients, that is, the less pain the patients with FM experience, the better QOL they will have. In a study carried out by Sahin et al., it has been reported that QOL decreased with increasing pain among patients with FM.¹³ The results of this study are in line with those of the present study. According to the results regarding the relationship between QOL and employment among patients with FM, it was found that the employed patients had a better QOL compared to the unemployed ones. This may be due to the fact that employed individuals are more physically active and are outdoors more hours of the day, making them feel less disabled compared to others. Furthermore, there was a significant and inverse relationship between BMI and QOL in patients with FMS, as patients with a lower BMI had a higher QOL. This was because of the physical fitness and preparedness of these individuals. In this regard, the results of the present study are similar to those of the study conducted by Neumann et al. on patients with FM.¹⁵ There was a significant and inverse relationship between morning stiffness and QOL. That is, the more patients complained of morning stiffness, the worse their QOL was. This issue has also been reported in other studies and this is due to the motor and mental inability to move at the start of daily activities.^{15,16}

Given the relatively high prevalence of FM, the following recommendations and clinical measures are presented. Based on the relationship between BMI and QOL among these individuals, weight loss methods, dietary regimen, and increased physical activity are recommended in order to improve the QOL of these individuals. In the present study, it was observed that employed individuals had a better QOL in comparison to the unemployed ones. This may be due to the fact that these individuals are more active, spend less time indoors, and are more present in the society. Therefore, it is recommended that individuals with FM participate in group work like group sports; however, further studies are required in this field. It was also observed that older individuals had lower QOL. This issue may be due to the chronicity of the disease, as older people experience this condition and suffer from widespread pain for a long time; hence, knowledge on the nature of the disease might help them to adapt themselves with the disease. Therefore, it is recommended that more time be spent when dealing with these patients, and their illness be well explained to them. Finally, due to the high prevalence and chronic nature of the disease, it is recommended that comprehensive plans and studies be carried out on how to deal with these patients and provide more effective treatments for this disease.

Conclusion

According to the results of this study, the QOL of patients with FM is affected by several factors including widespread pain, BMI, age, and morning stiffness. For this reason, exact and extensive studies are required.

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Conflict of Interest

Authors have no conflict of interest.

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