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ORIGINAL ARTICLE

Fibromyalgia awareness in women aged between 18 and 75 years: a current view to fibromyalgia

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Abstract

Aim To measure the fibromyalgia syndrome (FMS) knowledge of female patients admitted to a Physical Medicine and Rehabilitation outpatient clinic.

Subjects and methods One hundred seventy-two ($N = 172$) literate women aged 18–75 years were included in the study. FMS diagnosis was based on the American College of Rheumatology (ACR) 2010 Classification Criteria. Participants' age, height, weight, level of education and occupations were recorded. The participants were given a questionnaire consisting of 20 questions. The answers were given as true or false.

Results The participants were mainly housewives (52.9%) graduated from primary/middle school (43%). The median number of right answers was 10 (15.7%) with a positive correlation with education level ($r = 0.189$; $p = 0.013$). The majority of the participants knew that FMS was characterized by widespread pain as a disease more common in women. However, the false beliefs that the disease was inflammatory, develops deformities in the joints and reduces fertility reduction were not low.

Conclusion Patients' knowledge of the characteristics and long-term outcome of this multifaceted disease contributes to the control of disease. Therefore, patient education programs are important as a complementary treatment in FMS.

Keywords Fibromyalgia · Patient education · Treatment

Significance

What is already known about the subject?

Fibromyalgia still has an unidentified etiopathogenesis. It is seen in active women in middle age and affects their quality of life negatively. The disease has a broad spectrum of symptoms including widespread pain, fatigue, sleep disturbance, anxiety, depression, numbness in the hands, dizziness, cognitive dysfunction and gastrointestinal problems. Currently, there is no cure for the disease, and treatment remains symptom-based.

What this study adds?

For patients to be informed about the disease and its long-term outcome is important to the treatment success. Here, we questioned the knowledge of women aged between 18-75 years about FMS. Patient education, which is often ignored by physicians, is an important issue that often contributes to both the cost and treatment success.

Introduction

Fibromyalgia syndrome (FMS) is a complex chronic disease characterized by widespread pain, sleep disturbance and fatigue, and is seen in 4–13% of the population (Wolfe et al. 1995). The disease can be primary or secondary to chronic diseases such as diabetes, rheumatoid arthritis and asthma (Clauw et al. 2018). FMS has a significant impact on the social

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life and quality of life of affected people. It impacts areas of life by reducing the ability to work and participation in daily life, entertainment and sporting activities. Treatment includes medications such as analgesics, tricyclic antidepressants and muscle relaxants, cognitive behavioral therapy, exercises and training programs. The educational activities of patients help them to recognize the illness and improve their behavior toward achieving long-term results. Patient education is individual and is a complementary method to increase the effectiveness of standardized care. Training programs also contribute to the healthcare system in terms of cost by reducing medication use and doctor visits. Educational programs help to control and communicate specific information about the disease and situations that may arise (Burckhardt and Bjellee 1994; Hill 1997).

Health professionals have developed a range of scales that measure the level of knowledge of patients in chronic illnesses. Participants' knowledge levels are not generally assessed in FMS training programs. In the literature, a number of studies have been conducted to measure the level of FMS knowledge of health professionals (i.e., physicians, nurses) (Mu et al. 2013; Bloom et al. 2013; Buskila et al. 1997; Shleyfer et al. 2009; Kumbharee et al. 2017). Similary to our study, Suda et al. (2012) developed a FMS knowledge questionnaire for the public.

Do patients with FMS have enough knowledge about their disease? Providing sufficient information about the disease also increases treatment adherence and the success of treatment. False beliefs about FMS disease are commonly seen among the public. We aimed to measure the level of knowledge about FMS of patients using a 20-item questionnaire that we developed in our study.

Method

The study designed was prospective and cross-sectional. One hundred seventy-two ($N = 172$) literate women aged 18–75 years who were admitted our to Physical Medicine and Rehabilitation outpatient clinic between February 2018 and May 2018 were included in the study. FMS diagnosis was based on the American College of Rheumatology (ACR) 2010 classification criteria (Wolfe et al. 2010). Participants' age, height, weight, level of education and occupations were recorded. Participants were given a 20-item questionnaire that we developed, and the data were obtained in this way. The answers were given as true or false. Male sex, significant neuropsychiatric illness (e.g., dementia, cognitive impairment) and illiteracy were exclusion criteria.

Statistical analysis

All statistical analyses were performed using the SPSS version 21.0 program (SPSS Inc., Chicago, IL, USA). Descriptive analyses were based on frequencies and percentages for categorical variables and mean ± standard deviation (SD) or median for continuous variables. The Kolmogorov-Smirnov test and histogram analysis were used to assess the distribution of the data. If the data were normally distributed, they are presented as mean ± SD; when abnormally distributed, we report the median of the values. Spearman's correlation analysis was used to evaluate the association between education level and the number of correct answers. $p < 0.05$ was considered statistically significant.

Results

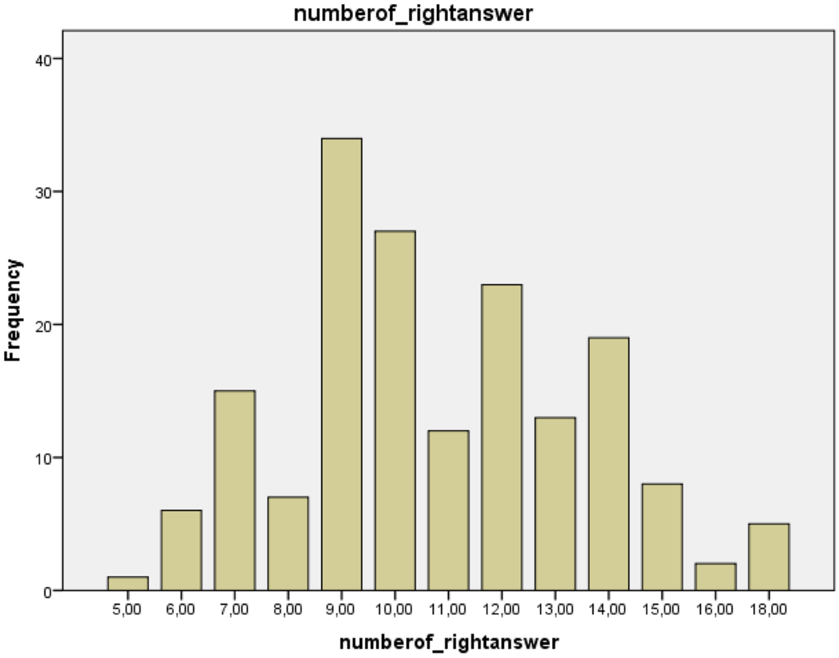
A total of 172 female patients were included in the study with an average age of 36.6 ± 14.3 years. The mean body mass index (BMI) was 26.9 ± 7.2 kg/m^2. The educational level and occupations of the participants are shown in Table 1. The participants were mainly housewives (52.9%) who had graduated from primary/middle school (43%). The median number of correct answers was ten (15.7%) (Fig. 1), with a positive correlation between the number of correct answers

Table 1 Sociodemographic characteristics of the participants

	N/%
Education level	
Primary/middle	74/43
High	50/29.1
Postdoc/university	48/27.9
Occupation	
Cook	1/0.6
Lawyer	2/1.2
Retired	4/2.3
Housewife	91/52.9
Worker	6/3.5
Desk job	14/8.1
Teacher	4/2.3
Secretary	11/6.4
Sociologist	3/1.7
Student	6/3.5
Technician	2/1.2
Other	2/1.2
Q20. From which source did you obtain the information about fibromyalgia?	
Health professionals	50/29.1
TV, newspaper, magazine	23/13.4
Social media	11/6.4
Environtment	64/37.2
Other	24/14
Number of right answers	Median 10 (5–18)/15.7

Q = question

Fig. 1 Frequency of correct answers



and education level ($r = 0.189$; $p = 0.013$) (Fig. 2). The correct answer ratios of the questions are shown in Table 2.

Discussion

The participants in our study comprised mostly middle-aged housewives with primary/middle school education. Most of their information about FMS was acquired from their environment. From a total of 20 questions, the participants gave at least 5 correct answers and a maximum 18 correct answers. The number of correct answers was ten on average, which was observed in four participants. The number of correct answers increased linearly with the education level. The best-known knowledge was that FMS is characterized by widespread musculoskeletal pain and that it is more likely to be seen in females than males, that it does not cause deformity in joints, it is accompanied by forgetfulness/dizziness and sleep disturbances, and it is treated with antidepressants. The majority of participants thought that FMS was an inflammatory rheumatoid

Fig. 2 Relation of number of correct answers to education

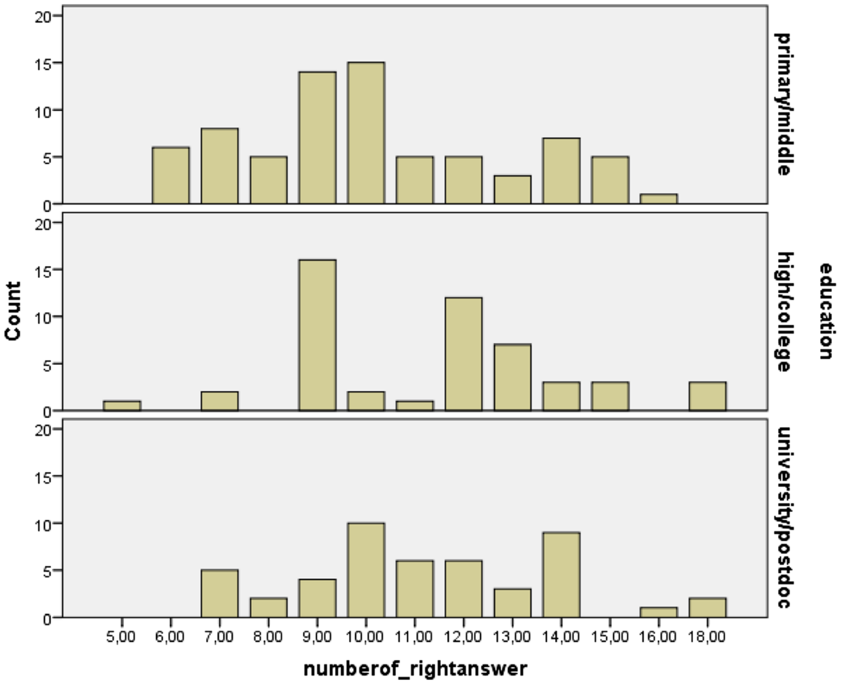


Table 2 Ratios of true/false answers about fibromyalgia

	True answer, N/%	False answer, N/%	No answer, N/%	The answer should be:
Q1. Fibromyalgia is characterized by widespread musculoskeletal pain	139/80.8	27/15.7	6/3.5	Yes
Q2. Fibromyalgia is an inflammatory joint disease	64/37.2	104/60.5	4/2.3	No
Q3. Fibromyalgia is equally seen in females and males	112/65.1	60/34.9	0	No
Q4. Fibromyalgia increases inflammation in blood	60/34.9	106/61.6	6/3.5	No
Q5. Fibromyalgia causes deformity in joints	87/59.3	68/39.5	2/1.2	No
Q6. Fibromyalgia may cause forgetfullness and dizziness	120/69.8	48/27.9	4/2.3	Yes
Q7. Fibromyalgia reduces fertility	92/53.5	78/45.3	2/1.2	No
Q8. Fibromyalgia lasts for life	105/61	58/33.7	9/5.2	Yes
Q9. Sleep disturbance is common in fibromyalgia	103/59.9	69/40.1	0	Yes
Q10. Antidepressants are given in the treatment of fibromyalgia	132/76.7	40/23.3	0	Yes
Q11. In the treatment of fibromyalgia, a healthy diet is commonly recommended	131/76.2	41/23.8	0	Yes
Q12. Fibromyalgia is familial, can pass from mother to child	81/47.1	84/48.8	7/4.1	No
Q13. Fibromyalgia is completely psychological	96/55.8	66/38.4	10/5.8	No
Q14. Fibromyalgia affects the quality of life	92/53.5	78/45.3	2/1.2	Yes
Q15. Fibromyalgia treatment is only possible with medications	80/46.5	85/49.4	7/4.1	No
Q16. Fibromyalgia is a disease that can be healed completely	98/59.6	64/37.2	10/5.8	No
Q17. Exercise has an important place in the treatment of fibromyalgia	114/66.3	15/8.7	40/25	Yes
Q18. Fibromyalgia may be accompanied by intestinal and urinary problems	57/33.1	73/42.4	42/24.4	Yes
Q19. Fibromyalgia may be accompanied by numbness in the hands	91/52.9	36/20.9	45/26.2	Yes

Q = question

disease with high serum markers, it reduced fertility, was passed from mother to child, was treated with medication only and was not accompanied by bowel/urine problems. Half of the participants thought that FMS was completely psychological and did not affect quality of life. In particular, it was observed that the questions about intestinal/urinary problems and numbness in the hands were left unanswered at a ratio of 25%.

Despite recent evidence of endocrine, sympathetic and immune dysregulation, FMS is a mysterious disease that many people believe to be at the extreme end of the psychosomatic syndrome spectrum. The defining feature of FMS is chronic widespread pain, along with fatigue, mood and sleep disturbances, and 'fibrofog.' This is an expression of the characteristic cognitive dysfunction in patients with FMS (Borchers and Gershwin 2015). FMS is a common phenomenon, but it has not yet been elucidated in many ways. Commonly, pain can be accompanied by multiple symptoms, including sleep disturbance, fatigue, irritable bowel syndrome (IBS), headaches and mood disorders, which are common. The etiopathogenesis of the disease is unclear and can be affected by stress, medical illness and chronic painful conditions. The diagnosis of the disease is difficult because of its versatility and overlap with other chronic painful conditions. Currently, it is classified among central sensitization syndromes. Symptoms may be related to circulation, digestion, nervous, urinary and reproductive systems or may be musculoskeletal. Psychiatric disorders are often accompanied by frequent mood disorders (Cassisi et al. 2008; Arshade and Kong 2007). Tension and migraine headache, cystitis and IBS, and various functional somatic symptoms such as tingling, numbness, burning, cutaneous hyperalgesia, instant pain attacks and depression are frequently present in patients with FMS (Buskila 2009).

The etiopathogenesis of the disease is still unclear (Yunus 2007; Pilar Martínez et al. 2015). The ACR 1990 (Wolfe et al. 1990) classification criteria have been used for FMS for about 20 years, and approximately 25% of the cases in clinical practice do not meet these criteria. In 2010, Wolfe et al. (2010) found that physicians were not particularly sensitive to the difficulty of sensitive point examinations in the first step and important symptoms such as fatigue and cognitive impairment were not taken into consideration by the 1990 ACR criteria. The ACR 2010 FMS classification criteria are based on 19 pain locations and 41 somatic symptoms. The suggested criteria include symptoms associated with FMS and questioning the severity of these symptoms, excluding the identification of sensitive points. There should be no other symptoms associated with widespread musculoskeletal pain for at least 3 months or any disorder to explain the pain.

The disease has no cure, but control or partial recovery can be achieved with management including physical activity, education and appropriate medication. The first treatment approach involves patient education and non-pharmacologic methods. Treatment for specific needs is important, and the most frequently used treatment approaches are moderately effective. Optimal management requires rapid diagnosis. A full understanding of FMS requires a comprehensive assessment of pain, function and the psychosocial context. It should be considered a complex and heterogeneous condition with abnormal pain processing and other secondary features.

Body perception is affected by the severity of the disease in chronic diseases (Boyington et al. 2015; Akkaya et al. 2012). FMS substantially affects patients' relationship with their bodies and quality of life (Valenzuela-Moguillansky 2017; Duschek 2017). FMS management often requires a multidisciplinary approach with a combination of non-pharmacologic and pharmacologic treatment modalities for pain, fatigue, function and accompanying symptoms (such as depression). A health-related quality of life focus through balancing benefit and reducing treatment risk should be the aim, and patient preference should be considered. The first treatment approach should focus on non-pharmacologic therapies (Lopez-Pousa et al. 2013; Borchers and Gershwin 2015; Sawaddiruk et al. 2017; Gracely et al. 2002; Wolfe et al. 1984; Buskila et al. 2003; Thompson and Barkhuizen 2003) .

The diagnosis and treatment process is long and complex, with an average waiting period of 2 years because of the presentation to many different clinics. In the treatment of pain, fatigue, sleep, mood and cognitive symptoms, symptom-based therapy is appropriate (Arnold and Clauw 2017). For depression, anxiety, sleep disturbance, and pain, behavior and learning strategies and self-confidence are important in the pain experience and transition to chronic pain. Aggressive treatment of depression is necessary. Without psychologic and behavioral variables, pharmacologic treatment is of limited effectiveness. Depression can be given non-pharmacologic treatments. Many people with chronic pain are depressed because of the belief that activity will increase pain and fatigue. In fact, limiting activity should be avoided without leaving work. Graded aerobic exercise (walking, cycling, in-water exercise) is important for patients with FMS because it promotes improvement of clinical symptoms and aerobic functional capacity. However, exercise programs should start at a mild level with a gradual transition to endurance/strengthening exercises. Exercise provides improvement and general well-being in subjective and objective measures of pain in FMS. Aquatic therapy (in a warm pool), Qigong, heat and massage have positive effects. Diffuse and regional pain is improved with saunas, hot baths, showers, hot mud and massage. Workplace and home overloading, obesity and bad posture activities should be well defined (Sanz-Baños et al. 2017). In a study conducted by Gowanset al. (1999), a combined exercise program with exercise in patients with FMS had positive short- and long-term effects.

Sleeping badly can worsen and maintain symptoms; therefore, intensive treatment is indicated. Avoiding caffeine and large dinners, avoiding alcohol, basic relaxation techniques before bedtime, restriction of fluids in the evening if there is a urinary frequency problem and keeping a sleep diary (Koca et al. 2016) are among the dietary and behavioral changes that may be useful in informing sleep hygiene.

These patients are often interested in their diet and are highly influenced by information that promotes complementary and alternative approaches. General healthful nutrition, appropriate vitamin supplements, bone health and weight loss should be encouraged. Although no diet or nutritional approach is universally accepted, there is increasing evidence to suggest that some nutritional changes may improve FMS symptoms. These patients produce free radicals that cause more harm than in healthy people and have reduced antioxidant capacity. Dietary antioxidants consumed in foods are very important for increasing the antioxidant status and protecting antioxidant systems. Other dietary measures used in FMS include malic acid and magnesium combination antioxidants, amino acids, herbs and food supplements (Rossia et al. 2015; Aman et al. 2018).

Current pharmacotherapies include medications targeting serotonin and noradrenaline levels in the central nervous system, e.g., tricyclic antidepressants, noradrenaline reuptake inhibitors of serotonin and voltage-gated calcium channel subunit ligands such as gabapentin and pregabalin (Lawson 2017; Kia and Choy 2017). Patients with FMS are often sensitive and develop adverse effects; thus, low doses should be initiated. Duloxetine and milnacipran (antidepressant) should be given in the lowest dose for pain, fatigue and sleep problems (Thorpe et al. 2018). The heterogeneity of FMS is observed with the presence of subpopulations, pathophysiologic contribution of peripheral and central components, and a wide range of accompanying comorbidities. The complexity and multidimensional nature of FMS causes the diversity of pharmacologic targets of interest.

Limitation of the study

The collection of patient data only in one clinic and the acquisition of questions by a non-generic scale are obstacles to the generalization of the study outcome. The questionnaire was prepared by the authors and does not contain all of the data related to FMS. The age range of the participants was very wide; the level of knowledge between people aged 18 or 70 years will be different.

Conclusion

FMS is a disease that affects many systems, and the diversity of the etiopathogenesis of the disease is also reflected in patient populations. We are confronted with patients with different characteristics. For this reason, the treatment is multifaceted and individualized. Patients' knowledge of the characteristics and long-term outcome of this multifaceted disease contributes to the control of disease. Therefore, patient education programs are important as a complementary treatment in FMS.

Compliance with ethical standards

Conflicts of interest The authors declare that they have no conflict of interest.

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