ORIGINAL RESEARCH

Evaluation of Body Image in Patients Diagnosed with Fibromyalgia

Fibromiyalji Tanısı Alan Hastalarda Beden İmajının Değerlendirilmesi

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Abstract

Objective: The aim of this study was to determine the extent to which body image is affected by pain severity in patients diagnosed with fibromyalgia (FM).

Method: A total of 51 patients who were selected from the psychiatry and algology outpatient clinics and had their informed consent obtained were included in the study. All patients were evaluated using the numeric rating scale, body image scale (BIS), Rosenberg self-esteem scale (RSES), Beck depression inventory (BDI), and Beck anxiety inventory (BAI).

Results: A moderate positive correlation was found between BAI scores and BDI and RSES scores, while a moderate negative correlation was found between BIS scores (p<0.05). Negative correlations were also observed between BDI scores and BIS and RSES scores.

Conclusion: In our study, it was observed that as depression and anxiety levels increased in FM patients, their perceptions of body and self-decreased, and the presence of a family history in patients also drew attention

Keywords: Body image, chronic pain, fibromyalgia, self-esteem

Öz

Amaç: Fibromiyalji (FM) tanısı alan hastalarında beden imajının ağrı şiddeti ile ne oranda etkilendiğinin ortaya koyulması amaçlanmıştır.

Yöntem: Bilgilendirilmiş onamları alınan, psikiyatri ve algoloji polikliniğinden kontrolleri ve takipleri yapılan toplam 51 hasta seçildi. Tüm hastalar nümerik değerlendirme skalası, beden imajı ölçeği (BİÖ), Rosenberg benlik saygısı ölçeği (RBSÖ), Beck depreyon ölçeği (BDÖ) ve Beck anksiyete ölçeği (BAÖ) ile değerlendirildi.

Bulgular: BAÖ puanları ile BDÖ ve RBSÖ puanları arasında pozitif yönde orta kuvvette, BİÖ puanları arasında negatif yönde orta kuvvette korelasyon olduğu belirlendi. BDÖ puanları ile BİÖ ve RBSÖ puanları arasında negatif yönde orta kuvvette korelasyon olduğu belirlendi (p<0,05).

Sonuç: Çalışmamızda, FM hastalarının depresyon ve anksiyete düzeyleri artıkça, beden ve benlik algıları düşüş gözlenmiş olup hastalarda aile öyküsünün varlığı da dikkati çekmiştir.

Anahtar kelimeler: Beden imajı, benlik saygısı, fibromiyalji, kronik ağrı

Introduction

Fibromyalgia (FM) is a chronic pain syndrome characterized by a range of symptoms, including muscle sensitivity, often accompanied by fatigue, sleep disturbances, and depressive moods (1). This condition affects around 2-3% of the population, with more than 90% of cases occurring in women. It also leads to various associated symptoms, including cognitive and functional challenges such as mood fluctuations, fatigue, sleep disruptions, headaches, and a notable impact on mental well-being (1-3).

Body image, an individual's perception of their physique, is intertwined with personality, while self-esteem involves feelings of self-worth and competence compared to others, implying that negative body perception may lead to reduced self-esteem. In contrast, self-esteem is defined as recognizing one's value and positivity without inferiority-superiority comparisons (4,5). Recognized as vital for

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contentment with one's body, body image's impact is more pronounced among women. Issues with body satisfaction have psychological implications, especially in relation to depressive symptoms, while positive body image enhances well-being and quality of life. Conversely, negative body satisfaction might lead to adverse health effects (5).

Within this context, it is hypothesized that while the etiological factors of FM may encompass negative body image and perception in patients, the diagnosis of FM might further exacerbate these negative perceptions regarding body image.

Materials and Methods

Sampling and Procedure

This cross-sectional study was conducted between July 1, 2018, and December 31, 2018, after receiving approval from the Ethics Committee (University of Health Sciences Turkey, Kanuni Sultan Süleyman Training and Research Hospital, approval no: KAEK/2018.6.23).

Patients who presented at the algology polyclinic with widespread body pain persisting for at least 6 months or more, without any prior treatment or diagnosis, and who met the FM diagnosis criteria as per the ACR-2016 guidelines, were invited for this study (6). Psychiatric interviews were conducted based on the DSM-5 criteria (7).

Obtaining "informed consent" was a fundamental step for this study, and it was secured from all participating patients. Utilizing a semi-structured form designed by the researcher, essential data regarding the patients' socio-demographic characteristics, diagnoses, and family history were systematically gathered. Each patient underwent comprehensive assessments employing the numerical rating scale (NRS), body image scale (BIS), Rosenberg self-esteem scale (RSE), Beck depression scale (BDI), and Beck anxiety scale (BAI).

Patients aged 18 and above were invited to participate in the study on a voluntary basis. Individuals with language impairments, insufficient educational background that could hinder diagnostic interviews, intellectual disabilities, ongoing use or addiction to psychoactive substances, or any mental disabilities attributed to medical factors were excluded from the study.

Measurement Instruments

Body image scale: BIS was developed to gauge satisfaction with various aspects and functions of the body (8).

Comprising 40 items, this scale utilizes a five-point rating system to assess body parts or functions. No specific cut-off score was established. The cumulative scores fall within the range of 40 to 200. At the assessment's conclusion, results are categorized as "low", "medium", or "high". Lower scores denote higher levels of dissatisfaction. The scale's validity has been established through a study conducted in Turkey (9).

RSE: RSE is designed to measure self-esteem (10). This scale encompasses 63 questions divided into 12 sub-categories, all featuring multiple-choice questions. The initial 10 items are employed to assess self-esteem. A score of 0-1 in the "self-esteem" subtest suggests "high" self-esteem; scores of 2-4 indicate "moderate" self-esteem, while scores of 5-6 signify "low" self-esteem. The scale's validity has been established through research carried out in Turkey (11).

Beck depression inventory: BDI is a self-report measure designed to evaluate emotional, cognitive, somatic, and motivational facets. It serves as a widely used tool in research and clinical settings to comprehensively assess depression symptoms and cognitive content. Consisting of 21 items, the scale addresses emotions, cognition, behavior, physical symptoms, and interpersonal symptoms. The survey form contains 21 questions, with patients selecting the most suitable response. Scores between 0 and 63 are obtained by assigning values of 0, 1, 2, and 3 to each question. Results are categorized as follows: 0-9 for no/minimal depression, 10-18 for mild depression, 19-29 for moderate depression, and 30-63 for severe depression (12). The BDI's validity and reliability, as a measure of depression intensity, have been confirmed for Turkish society (13).

Beck anxiety inventory: BAI functions as a self-assessment tool used to determine the frequency of anxiety symptoms experienced by individuals (14). Comprising 21 items, this Likert scale assigns scores between 0 and 3 to each item. The scale's validity and reliability for Turkish usage have been established (15).

Pain intensity: NRS is a widely adopted and straightforward tool in clinical practice for assessing pain intensity. The scale's baseline corresponds to the absence of pain, while its upper limit represents the worst pain experienced. Patients are asked, "On a scale of 0 to 10, how would you rate your pain currently?" and are guided on how to evaluate their pain within this scale (16). NRS scores between 0-4 indicate mild pain, scores of 5-7 denote moderate pain, and scores of 8-10 signify severe pain.

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Statistical Analysis

IBM SPSS Version 25 was used in the statistical analysis of this study (17). Mean, standard deviation, median, minimum, maximum and quartile values were used to present the descriptive data. Chi-square (X^2) analysis was used for comparison of categorical variables. Since the scores obtained from the scales did not show a normal distribution, the Mann-Whitney U test was used to compare the mean scores. Spearman Correlation analysis was used to compare scale scores. Linear regression model was used to evaluate the factors affecting the data with continuous variable characteristics. Logistic regression analysis was used to evaluate the factors affecting the variable expressed in pairs. The limit of statistical significance was accepted as $p < 0.05$ (18).

Results

Socio-demographic Characteristics

Fifty-one participants [aged 18-67, 50 (98%) females, one (2%) male] completed the study. The mean age was calculated as 44.71±10.74 years. The number of people currently working was significantly less than those who did not work (n=6). Mean body mass index was 28.10±4.97. The most common chronic disease accompanying was thyroid dysfunction [22 (43.2%)]. Other socio-demographic and some physical characteristics are summarized in Table 1.

Pain Intensity Evaluation

Pain Intensity distribution in FM patients is given in Table 2. As seen, 12 patients (23.5%) had moderate pain intensity and 39 patients (76.5%) had severe pain intensity.

Anxiety, Depression, Body Image, and Self-esteem Evaluation

The total scores obtained from the study's utilized scales were as follows: 27.80±13.16 (moderate anxiety) for BAI; 21.61±8.21 (moderate depression) for BDI; 122.61±20.37 for BIS; 1.31±0.76 for RSE (Table 3).

When the correlations (Spearman Correlation analysis) between BAI, BDI, BIS and RSE scores, it was determined that there was a positive correlation between the BAI scores and the BDI and RSE scores, and a negative correlation between the BIS scores ($p < 0.05$ for each). It was determined that there was a negative correlation between BDI scores and BIS and RSE scores ($p < 0.05$ for each) (Table 4).

The comparison of the BAI, BDI, BIS and RSE scores of the groups divided into moderate and severe according to the

Table 1. Demographic findings of the patients								
Parameters	n	%	Mean	SD	Min	Max	IQR 25	IQR 75
Gender								
Male	1	2						
Female	50	98						
Age (years)			44.71	10.74	18.00	67.00	36.00	53.00
Education (years)			7.00	4.25	0.00	15.00	5.00	11.00
Working status								
Still working	6	11.8						
Left job	23	45.1						
Never worked	22	43.1						
Marital status								
Single	3	5.9						
Married	40	78.4						
Widow	2	3.9						
Divorced	4	7.8						
Living together	2	3.9						
BMI			28.10	4.97	18.00	41.00	25.00	31.00
Physical trauma								
Yes	13	25.5						
No	38	74.5						
Physical permanent problem								
Yes	6	11.8						
No	45	88.2						
Suicidal attempt								
Yes	5	9.8						
No	46	90.2						

N: Number, SD: Standard deviation, IQR: Interquartile range, BMI: Body mass index, BMI calculated using the formula kg/m².

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intensity of pain in the study. As a result of Mann-Whitney U, there was no difference between the two groups in terms of BDI, BAI, BIS and RSE scores (p>0.05 for each) (Table 5).

Binary logistic regression analysis revealed that socio-demographic status, anxiety, depression, body image, and self-esteem were not associated with whether the pain intensity moderate or severe.

Discussion

The presence of numerous symptoms, primarily pain, in individuals with FM leads to a reduced quality of life, curtailing their daily activities. These symptoms might also alter how FM patients perceive themselves and their bodies, potentially exerting a detrimental influence on the disease progression and potentially paving the way for subsequent psychiatric issues (19,20). Hence, our study aims to comprehensively assess the interplay of body perception, self-esteem, as well as socio-demographic and clinical attributes among FM patients.

Although the number of participants in our sample was not extensive, the socio-demographic characteristics we observed among FM patients are consistent with previous data (2,19,20) (with a higher proportion of female participants, lower education levels, and socio-economic status).

In the present study, we observed that patients diagnosed with FM exhibited coexisting moderate levels of depression (with a mean BDI score of 21) and moderate levels of anxiety (with a mean BAI score of 27). Furthermore, a substantial proportion (76.5%) of participants reported experiencing severe pain intensity in our sample.

The co-occurrence of anxiety and depression in FM patients is well-documented in the literature, and previous studies (19-21) have established a connection between anxiety, depression levels, and pain intensity. Our findings align with these historical data. However, it's important to

note that our study did not explore the potential mediating role of anxiety and depression on pain intensity.

To address this gap, future research endeavors should aim to investigate the mediating role of anxiety and depression in influencing pain intensity among FM patients. Conducting larger-scale studies with diverse participant groups and incorporating control groups could offer a more comprehensive understanding of these relationships. Notably, none of the participants

Table 2. Pain intensity of the patients

Pain intensity	n	%
Moderate	12	23.5
Severe	39	76.5

Pain intensity assessed by numerical rating scale (NRS). NRS scores ranging from 5 to 7 indicate moderate pain, while scores of 8 to 10 represent severe pain

Table 3. The characteristics of the scores obtained by the study group from the scales

	Median	IQR 25	IQR 75
BAI	25.00	16.00	37.00
BDI	22.00	15.00	28.00
BIS	124.00	117.00	134.00
RSE	1.33	0.50	1.83

BAI: Beck anxiety inventory, BDI: Beck depression inventory, BIS: Body image scale, RSE: Rosenberg self-esteem scale, IQR: Interquartile range

Table 4. Correlations of the scores obtained by the study group from the scales

		BAI	BDI	BIS	RSE
BDI	r^s	0.533			
	p	<0.001			
BIS	r^s	-0.435	-0.475		
	p	<0.001	<0.001	.	
RSE	r^s	0.454	0.589	-0.534	
	p	<0.001	<0.001	<0.001	.
NRS	r^s	-0.080	-0.047	-0.045	0.064
	p	0.575	0.744	0.752	0.654

BAI: Beck anxiety inventory, BDI: Beck depression inventory, BIS: Body image scale, RSE: Rosenberg self-esteem scale, NRS: Numerical rating scale

Table 5. Comparison of the BDI, BAI, BIS and RSE scores of the groups that were divided into moderate and severe according to the intensity of pain in the study

	Moderate			Severe			p
	Median	IQR 25	IQR 75	Median	IQR 25	IQR 75	
BAI	26.00	17.50	34.50	25.00	16.00	37.00	0.903
BDI	20.50	15.00	26.50	22.00	15.00	29.00	0.563
BIS	124.00	116.50	132.50	124.00	117.00	134.00	0.747
RSE	1.04	0.38	1.75	1.33	0.75	1.99	0.379

BAI: Beck anxiety scale, BDI: Beck depression scale, BIS: Body image scale, RSE: Rosenberg self-esteem scale, NRS: Numerical rating scale

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emphasized in our study had a prior psychiatric or pain diagnosis. Considering the existing literature on the link between psychiatric co-morbidities and chronic pain, our results underscore the significance of psychiatric screening tests and interventions that can be implemented in primary care settings. Such measures have the potential to contribute to the amelioration of chronic pain severity, thereby improving the overall quality of life for individuals with FM.

In this study, the reported body image values of FM patients were notably low, which aligns with similar findings in previous research (22-24). Notably, our study revealed a significant correlation between the duration of the disease and a negative impact on body image. This suggests that the evolving physical perception and pain associated with disease progression could potentially contribute to adverse changes in body image. Interventions targeting the enhancement of body image have been linked to pain reduction in certain chronic pain conditions (25,26). Recent investigations have explored the potential differential effects of specific exercises compared to general exercises on tactile acuity alterations in FM patients, albeit without significant outcomes (26). When considering the intricate interplay between body image and the severity of fibromyalgia, it is imperative to reconsider these treatment strategies. The results of such re-evaluation could lead to meaningful advancements in the field and offer valuable insights into managing FM more effectively.

FM profoundly restricts patients across various dimensions of life, diminishing their functional capacity in physical, social, and psychological realms. This holistic impact exerts a negative influence on individuals' self-perception in their daily existence. While the subject has been explored in a limited number of studies, there is consensus that self-esteem tends to be lower in FM patients (20,27). In the context of our study, we expect results consistent with previous studies, given the high levels of pain severity among patients and the lack of prior psychiatric supportive care. A comprehensive assessment, involving a substantial cohort of both patients and a well-matched control group, would provide a more robust foundation for understanding the intricate interplay between pain, psychiatric factors, and self-esteem in fibromyalgia.

Another significant outcome arising from the evaluation tests conducted in our study pertains to the notable influence of psychological factors on patients' body and self-perception. This finding is consistent with existing literature (20,28) and highlighting that beyond addressing physical symptoms, the provision of psychological support holds substantial value in enhancing patients' self-perception.

Conclusion

The depression and anxiety levels of FM patients negatively affect their body and self-perception, and family history plays an important role in the etiology of these patients.

Ethics

Ethics Committee Approval: This cross-sectional study was conducted between July 1, 2018, and December 31, 2018, after receiving approval from the Ethics Committee (University of Health Sciences Turkey, Kanuni Sultan Süleyman Training and Research Hospital, approval no: KAEK/2018.6.23).

Informed Consent: Informed consent obtained were included in the study.

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Authorship Contributions

Surgical and Medical Practices: H.M.B., İ.A.Ş., Concept: H.M.B., İ.A.Ş., Design: H.M.B., İ.A.Ş., Data Collection or Processing: H.M.B., İ.A.Ş., Analysis or Interpretation: H.M.B., İ.A.Ş., Literature Search: H.M.B., İ.A.Ş., Writing: H.M.B., İ.A.Ş.

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