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The Effects of Religious Belief Level and Psychological Resilience on the Severity of Fibromyalgia Symptoms

Dini İnanç Düzeyi ve Psikolojik Dayanıklılığın Fibromiyalji Belirtilerinin Şiddeti Üzerindeki Etkileri

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The Effects of Religious Belief Level and Psychological Resilience on the Severity of Fibromyalgia Symptoms

Abstract

Objective: The effects of religiousness, forgiveness, and psychological resilience in patients with fibromyalgia have been investigated with regard to various aspects in the literature. However, there is no study investigating the effects of these concepts collectively in patients with fibromyalgia symptoms.The aim of this study was to investigate whether religious belief, forgiving nature and psychological resilience had any relationship with fibromyalgia symptom burden.

Material and Method: This descriptive study included 49 patients aged between 18–65 years with a diagnosis of fibromyalgia syndrome (FMS) who had applied to the out-patient clinic of the Physical Therapy and Rehabilitation Department of a University Hospital between 15 December 2019 and 15 April 2020.

Results: There were a total of 49 female patients in this study. The mean age of the patients participating in the study was 45.04 ± 9.25 years. Religiousness was found to be significantly associated with some subscales of psychological resilience. Additionally, most subscales of psychological resilience were significantly related with the severity of fibromyalgia. The level of religious belief influenced the relationship between psychological resilience and the severity of fibromyalgia.

Conclusion: In this study, it has been found that religious belief and forgiveness levels did not have a direct effect on fibromyalgia symptoms. Most of the subscales of psychological resilience were found to be associated with the severity of fibromyalgia symptoms. It is clear that psychological resilience has an effect on the severity of fibromyalgia symptoms, but further research is needed to assess mechanisms

Keywords: Fatigue, fibromyalgia, forgiveness, psychological resilience, religious belief.

Özet

Amaç: Literatürde fibromiyaljili hastalarda dindarlık, bağışlayıcılık ve psikolojik dayanıklılığın etkileri çeşitli açılardan araştırılmıştır. Ancak fibromiyalji semptomları olan hastalarda bu kavramların etkilerini toplu olarak araştıran bir çalışma bulunmamaktadır. Bu çalışmanın amacı, dini inanç, bağışlayıcılık ve psikolojik dayanıklılığın fibromiyalji semptom yükü ile ilişkisi olup olmadığını araştırmaktır.

Gereç ve Yöntem: Tanımlayıcı tipte olan bu çalışmaya, 15 Aralık 2019 ile 15 Nisan 2020 tarihleri arasında bir Üniversite Hastanesi Fizik Tedavi ve Rehabilitasyon Bölümü polikliniğine başvuran fibromiyalji sendromu (FMS) tanısı ile başvuran yaşları 18-65 arasında değişen 49 hasta dahil edildi.

Bulgular: Bu çalışmada toplam 49 kadın hasta vardı. Katılımcıların yaş ortalaması 45,04 ± 9,25 yıl idi. Dindarlık, psikolojik dayanıklılığın bazı alt boyutlarıyla anlamlı olarak ilişkili bulundu. Ek olarak, psikolojik dayanıklılığın çoğu alt ölçeği, fibromiyaljinin şiddeti ile önemli ölçüde ilişkiliydi. Dini inanç düzeyi, psikolojik dayanıklılık ile fibromiyaljinin şiddeti arasındaki ilişkiyi etkilemiştir.

Sonuç: Bu çalışmada dini inanç ve bağışlama düzeylerinin fibromiyalji semptomları üzerinde doğrudan etkisinin olmadığı bulunmuştur. Psikolojik dayanıklılığın alt ölçeklerinin çoğunun fibromiyalji semptomlarının şiddeti ile ilişkili olduğu bulundu. Psikolojik dayanıklılığın fibromiyalji semptomlarının şiddeti üzerinde bir etkisi olduğu açıktır, ancak mekanizmaları değerlendirmek için ileri araştırmalara ihtiyaç vardır.

Anahtar Sözcükler: Bağışlama, dini inanç, fibromiyalji, psikolojik dayanıklılık, yorgunluk.

Introduction

Fibromyalgia is a systemic disorder characterized by diffuse pain in various parts of the body and fatigue, sleep disorders, headache, and sometimes, cognitive disorders (1). Around 2–8% of the population suffers from this disease and there are pharmacological and non-pharmacological options supported by high-quality evidence for its treatment (2). One of the two main 'pathways' that allegedly reduce the severity of fibromyalgia symptoms is the psychological pathway (based on psychological resilience), while the other is the physical pathway in relation to physical activity levels (3).

Psychological resilience is defined as mental processes and behaviors that are effective in protecting an individual from potential negative effects of stress factors (4). The effects of psychological resilience on disease severity in patients with fibromyalgia and chronic pain disorder and factors related to psychological resilience have been widely investigated and different findings on this subject are available in the literature. Significant differences have been observed in patients with chronic pain disorder that were defined to have high or low psychological resilience, in terms of their ways of coping with their disease, their attitudes and beliefs related to pain, their tendency to be crippled by the condition, their positive and negative social responses to pain, and health characteristics and compliance with treatment (5). It has been found that patients who can adapt to higher levels of pain and are less affected by fibromyalgia syndrome (FMS) have fewer depressive symptoms, pain disaster, and psychological inflexibility and these factors are also considered to be among the sources of psychological resilience in FMS (6).

In the social field, religiousness has been explained by Coştu as a way of thinking, feeling and behavior towards religious beliefs and practices. Normative-style religious orientation is defined as the basic determinative, actual and moral teachings of the religion that determine the way of religious life of the individual (7). Many studies have shown that there is a direct relationship between religious belief and health outcomes, including mortality, physical illness, mental illness, quality of life and coping with illness (8, 9).

It has been reported that forgiveness (having a forgiving nature) is among the resilience factors that affect health characteristics; furthermore, forgiveness may be useful in minimizing stress-related disorders (10). A positive relationship was found between forgiveness and physical health (11). A high level of forgiveness in patients with FMS, both towards themselves and others, has been demonstrated to be beneficial for the patient's mental health, quality of life and anger level (12). It has been claimed that forgiveness has a direct positive effect on recovery in patients with FMS and chronic fatigue syndrome, by reducing anger, stress and other negative sensations (13).

The effects of religiousness, forgiveness, and psychological resilience in patients with fibromyalgia have been investigated with regard to various aspects in the literature. However, there is no study investigating the effects of these concepts collectively in patients with fibromyalgia symptoms. For this purpose, we investigated the relationships between religious belief and forgiveness levels, psychological resilience and symptom severity in a group of women with fibromyalgia.

Material and Method

This descriptive study included 49 patients aged between 18–65 years with a diagnosis of FMS who had applied (for routine follow-up) to the outpatient clinic of the Physical Therapy and Rehabilitation Department of Hitit University Corum Erol Olcok Training and Research Hospital between 15 December 2019 and 15 April 2020. Among eligible patients, all participants meeting inclusion/exclusion criteria provided written informed consent for the use of data in scientific research. The study conformed with the Helsinki Declaration (including 2013 amendments). The study was granted approval by the local ethics committee (Date:11.12.2019, No:110). Attending physicians

applied the measurement scales used in this study.

Inclusion criteria

The inclusion criteria of the study were accepted as being between the ages of 18-65 years, being a woman, having a diagnosis of fibromyalgia, accepting to participate in the study of their own accord, and not having any mental illness that would limit reasoning when completing questionnaires (such as mental retardation or psychotic disorder). All individuals included in the study were Muslims (followers of the Islam religion). Only female patients were included because almost all of the patients admitted to the Department of Physical Therapy and Rehabilitation with a diagnosis of fibromyalgia were women. Three patients refused to participate in the study because they found the questions about their religious beliefs disturbing, and one patient did not have time.

Exclusion criteria

Illiterate patients or those with insufficient cognitive ability (mental retardation, dementia, etc.) to read or understand and complete the scales, and those with any limiting condition that could prevent them from understanding the acceptance of participation with their own free will, were excluded.

Sample size estimations and power analysis

Sample size calculation was based on correlation analysis used to test the primary hypothesis. It was found that a minimum of 46 individuals needed to be included to be able to assess significant relationships in the groups, using $\alpha = 0.05$ error (95% confidence interval), and 80% power ($1-\beta=0.80$). When needed, post-hoc power analysis was performed to assess power for statistically significant primary hypotheses, with respect to $\alpha = 0.05$ error. The G*power (version 3.1.9.6) package was used for a priori (sample size estimation) and post-hoc analyses. Patients were consecutively included in the study until the sample size was reached. When the post-hoc power analysis was calculated, it was seen that the power was higher than 80% in all analyses.

Fibromyalgia diagnostic criteria

All FMS diagnoses were based on the diagnostic criteria of the American College of Rheumatology (ACR) (2016) (14).

1. Widespread pain index (WPI): Number of painful body regions in the last week (score range 0–19). Shoulder girdle, left-right; hip, left-right; chin, left-right; back; upper arm, left-right; thigh, left-right; chest and waist; forearm, left-right; leg, left-right; abdomen and neck.
2. Symptom severity scale

- Fatigue
- Getting up tired in the morning
- Presence of cognitive symptoms
- Presence of general somatic symptoms

Data collection

Patient-related sociodemographic characteristics (name, age, educational and marital status, and occupation) and disease-related clinical information were obtained. Functional status was assessed using the Fibromyalgia Impact Questionnaire (FIQ). The level of religious belief was measured with the Religious Orientation Scale, forgiveness with the Tendency to Forgiveness Scale, and resilience with the Psychological Resilience Scale for adults.

Fibromyalgia Impact Questionnaire (FIQ)

The original form of the scale has been developed by Burckhardt CS and colleagues (15). This scale measures physical function, well-being, missing work, difficulty in performing professional duties at the workplace, pain, fatigue, morning fatigue, stiffness, anxiety, and depression. Except for “the ability to feel good” parameter, lower scores are indicative of lower disease impact (better). The FIQ was filled by the patients themselves. Each subsection is scored to a maximum of 10 points; thus, the maximum total score is 100. Of note, average FMS patients score around 50 points, while severe cases score >70 points (15, 16).

Psychological resilience scale for adults

This is a 5-point Likert-type scale tool consisting of 33 questions and developed by Friborg O and colleagues

(17). Scores range from 33 to 165 points. While some assess scores with minor variations, traditionally, the answer boxes are evaluated as 1-2-3-4-5 points from left to right, while reverse-scored questions (numbered 1, 3, 4, 8, 11, 12, 13, 14, 15, 16, 23, 24, 25, 27, 31 and 33) are scored from right to left (17, 18).

Religious orientation scale

This scale was developed by Coştu Y (7). It consists of 37 items and is in a 5-point Likert scale format. Normative-style religious orientation is defined as the basic determinative, actual, and moral teachings of the religion that determine the way of religious life of the individual. There are 30 items in total, 6 of which are scored inversely and 24 of which are scored normally in the subscale of normative-style religious orientation. There are 7 items in the 'popular-style religious orientation' subscale. Popular-style religious orientation has been defined as the composition of rituals of traditional religious/mystical styles of the population (7). We used only the normative-style religious orientation subscale in our study.

Tendency to forgiveness scale

This scale was developed by Ayten A (19). It is comprised of 20 items (Likert-type), all responses are based on the patients' interpretation of the self-appropriateness of each item (19). Scores closer to 5 points indicate higher levels of forgiveness, and lower scores indicate lower levels of forgiveness.

Statistical Analysis

Statistical analysis of the data collected in our study was performed with the SPSS (Version 22, Chicago, IL, USA) package program. Descriptive statistics of continuous variables obtained by measurements were reported using mean ± standard deviation or median (min-max) depending on their normality of distribution. Nominal or ordinal variables were described with absolute and relative frequency. The detection of distribution was performed by the Shapiro-Wilk test. The correlations between religious beliefs, level of forgiveness, psychological resilience scale scores and the severity of fibromyalgia symptoms obtained from the responses of the patients were analyzed by the calculation of Spearman correlation coefficient for each pair. Univariate regression analysis was used to model the relationships between religious attitude and structural style and between religious attitude and social resources variables that demonstrated significant differences. All analyses were subject to a significance threshold of <0.05 (*p value*).

Results

All individuals included in the study were Muslims. Only female patients were included because almost all of the patients admitted to the Department of Physical Therapy and Rehabilitation with a diagnosis of fibromyalgia were women. Three patients refused to participate in the study because they found the questions about their religious beliefs disturbing, and one patient did not have time.

Table I. Sociodemographic characteristics of patients

	Groups	Frequency	Percent (%)
Occupation	Housewife	39	79.6
	Worker	7	14.3
	Officer	2	4.1
	Retired	1	2.0
Education	Primary school	33	67.3
	Elementary school	7	14.3
	High school	6	12.2
	University	3	6.1
Marital status	Married	45	91.8
	Divorced	4	8.2
Number of children	0	1	2.0
	1	2	4.1
	2	22	44.9
	3	20	40.8
	4	2	4.1
	5	2	4.1
	Total	49	100

There were a total of 49 female patients in this study. Participants' mean age was 45.04 ± 9.25

(min-max: 28–65) years. Other sociodemographic characteristics are depicted in Table 1. Descriptive statistics of religious attitude, forgiveness, and psychological resilience subscale scores and WPI, symptom severity scale, total score and FIQ values are presented in Table 2. No statistically significant correlation was found between religious attitude or forgiveness scale scores and WPI, symptom severity scale, total score, and FIQ values (*p>0.05;* Table 3).

Table II. Descriptive statistics of the scale scores (n=49)

	Mean ± SD	Median (min-max)
Widespread Pain Index	13.14 ± 2.49	13 (7-18)
Symptom Severity Scale	8.86 ± 1.63	9 (5-12)
Total Score	22.00 ± 3.35	22 (14-29)
FIQ	68.11 ± 16.42	69.6 (21.6-94.3)
Forgiveness	65.35 ± 8.95	67 (44-80)
Religious Attitude	130.76 ± 14.71	131 (92-150)
Structural Style	14.22 ± 3.96	14 (4-20)
Future Perception	11.98 ± 5.02	12 (4-20)
Family Cohesion	22.08 ± 5.82	23 (6-30)
Self-Perception	21.02 ± 5.55	22 (9-30)
Social Competence	21.27 ± 5.60	22 (6-30)
Social Resources	26.67 ± 6.00	27 (11-35)

Statistically significant weak positive correlations were found between religious attitude and the 'structural style' and 'social resources' subsection scores of the psychological resilience scale (*r=0.392, p=0.005; r=0.413, p=0.003*, respectively). No significant relationship was found between religious attitude and other psychological resilience subscale scores (*p>0.05*). No statistically significant correlation was found between forgiveness scale scores and psychological resilience subscale scores (structural style, future perception, family cohesion, self-perception, social competence, and social resources) (*p>0.05*) (Table 4).

Table III. Spearman correlation coefficients between religious attitude and forgiveness scale scores and widespread pain index (WPI), symptom severity scale (SSS), total score and FIQ values (n=49)

		WPI	SSS	Total Score	FIQ
Religious Attitude	*r*	0.005	-0.005	-0.006	-0.231
	p	0.971	0.975	0.968	0.111
Forgiveness	*r*	0.153	-0.083	0.103	-0.028
	p	0.295	0.569	0.480	0.846

Statistically significant negative correlations were found between structural style scores and FIQ values, between future perception scores and symptom severity scale, total score and FIQ values, between self-perception scores and symptom severity scale, total score and FIQ values, between social competence scores and total score and FIQ values, and between social resource scores and FIQ values (Table 5).

As a result of univariate regression analysis, we found that lower religious attitude is associated with and structural style (OR: 0.086, 95%CI: 0.024 - 0.161, *p=0.024*) and social resources (OR: 0.140, 95%CI: 0.027 - 0.252, *p=0.016*).

Table IV. Spearman correlation coefficients between religious attitude and forgiveness scale scores and psychological resilience subscale scores (structural style, future perception, family cohesion, self-perception, social competence and social resources) (n=49)

		Structural Style	Future Perception	Family Cohesion	Self-Perception	Social Competence	Social Resources
Religious Attitude	*r*	**0.392****	0.244	0.121	0.096	0.203	**0.413****
	p	**0.005**	0.091	0.409	0.511	0.161	**0.003**
Forgiveness	*r*	-0.017	0.255	0.237	0.224	0.104	0.248
	p	0.906	0.077	0.101	0.122	0.477	0.085

Table V. Spearman correlation coefficients between psychological resilience subscale scores (structural style, future perception, family cohesion, self-perception, social competence and social resources) and widespread pain index (WPI), symptom severity scale (SSS), total score and FIQ values before and after checking religious attitude and forgiveness scale scores

Control Variables			WPI	SSS	Total Score	FIQ
No	Structural Style	*r*	-0.127	-0.128	-0.188	**-0.392**
		p	0.385	0.381	0.195	**0.005****
	Future Perception	*r*	-0.220	**-0.313**	**-0.313**	**-0.400**
		p	0.130	**0.028***	**0.029***	**0.004****
	Family Cohesion	*r*	-0.066	-0.195	-0.166	-0.210
		p	0.654	0.180	0.254	0.147
	Self-Perception	*r*	-0.209	**-0.339**	**-0.333**	**-0.354**
		p	0.149	**0.017***	**0.019***	**0.013***
	Social Competence	*r*	-0.231	-0.221	**-0.328**	**-0.408**
		p	0.111	0.127	**0.021***	**0.004****
	Social Resources	*r*	-0.063	-0.136	-0.156	**-0.344**
		p	0.668	0.352	0.283	**0.015***
Religious Attitude	Structural Style	*r*	-0.104	-0.226	-0.187	**-0.324**
		p	0.484	0.123	0.203	**0.024***
	Future Perception	*r*	-0.177	**-0.309**	-0.282	**-0.363**
		p	0.228	**0.033***	0.052	**0.011***
	Family Cohesion	*r*	-0.071	-0.206	-0.153	-0.268
		p	0.632	0.159	0.299	0.066
	Self-Perception	*r*	-0.217	**-0.326**	**-0.320**	**-0.300**
		p	0.139	**0.024***	**0.027***	**0.038***
	Social Competence	*r*	-0.215	-0.269	**-0.291**	**-0.329**
		p	0.143	0.064	**0.045***	**0.022***
	Social Resources	*r*	-0.002	-0.111	-0.055	-0.208
		p	0.991	0.453	0.709	0.156
Forgiveness	Structural Style	*r*	-0.111	-0.222	-0.191	**-0.357**
		p	0.451	0.129	0.195	**0.013***
	Future Perception	*r*	-0.217	**-0.297**	**-0.305**	**-0.395**
		p	0.138	**0.040***	**0.035***	**0.005****
	Family Cohesion	*r*	-0.103	-0.198	-0.172	-0.274
		p	0.488	0.177	0.242	0.060
	Self-Perception	*r*	-0.254	**-0.320**	**-0.344**	**-0.315**
		p	0.082	**0.026***	**0.017***	**0.029***
	Social Competence	*r*	-0.227	-0.262	**-0.295**	**-0.358**
		p	0.121	0.072	**0.042***	**0.013***
	Social Resources	*r*	-0.041	-0.102	-0.080	-0.251
		p	0.782	0.492	0.590	0.085

Discussion

No statistically significant relationship was found between religious belief level and fibromyalgia symptom burden. In a review article on the effect of religiosity and spirituality levels on various pain-related conditions in patients with chronic pain, it has been reported that there was no statistically significant relationship between religiosity and severity of pain in most studies, but religiosity has significant relationships with some factors that also affect pain (20). There is no evidence of the direct effects of religiosity on the severity of fibromyalgia symptoms, although the indirect effects of religiosity have been reported in patients with chronic pain disorders (associated with well-being and positive coping mechanisms), while religiosity has also been reported to influence the diurnal secretion of cortisol in fibromyalgia, and it has been suggested to relieve the physiological effects of stress (21, 22).

Similarly, rather than establishment of direct effects of forgiveness on symptom severity, various studies investigating the relationships between forgiveness and fibromyalgia have reported beneficial effects on quality of life, well-being, emotions, catastrophizing and coping behavior in patients with fibromyalgia symptoms (11-13, 23). In line with all these findings, we have also not found any direct influence of religious belief and forgiveness on the severity of fibromyalgia symptoms.

In the present study, we determined mild-moderate relationships between the level of religious belief and the 'structural style' and 'social resources' subscales of the psychological resilience scale. It has been reported that the structural style score of this scale evaluates the subject's ability to support, plan and organize daily routines (17). In the literature, no study was found to explain the relationship between these abilities and religious beliefs. However, we thought there might be a way to explain, or better, to quantify these relationships. We thought that worship-related practices, such as ablution and prayer, which are performed at certain times of the

day in the Islamic religion, may help the individual improve their planning and organizing skills. Although the correlation coefficient was low, the significant relationship between religious belief and the structural style subscale may support this suggestion. It has been reported that the social resources subscale assesses the individual's access to external support from their friends and relatives, and the individual's ability to provide support to those surrounding them (17). The beneficial effect of religious beliefs on a person's ability to cope with diseases has previously been associated with the humanitarian and divine support that helps to reduce isolation and loneliness (24). We thought that this feature of religiousness could have been exemplified by the correlation between social support and religiousness that was determined with our results, although it must be noted that this correlation was also rather weak.

There was no statistically significant correlation between forgiveness scale scores and psychological resilience subscale scores. It has been reported that forgiveness contributes to coping mechanisms by reducing the negative effects of intense stress (10). However, although the concepts of coping and resilience are often used interchangeably, there is evidence that they are conceptually completely different concepts. While psychological resilience is described as a concept that affects how an adverse event is evaluated, coping is described as a concept that explains the actual response to stress exposure due to such events (4). In previous studies, forgiveness has been shown to be useful in areas related to coping mechanism in fibromyalgia, such as mental health, quality of life, reducing anger, stress and other negative sensations (12, 13). However, we did not investigate the effect of forgiveness on coping styles in this study. We concluded that some personality traits and mental schemes, which we did not investigate in this study, may be effective on psychological resilience levels rather than forgiveness levels.

We have found that the structural style and social resources subscales of the psychological resilience scale were associated with functionality scale, while future perception, self-perception and social competence subscales were associated with both symptom severity and functionality. It has been claimed that psychological resilience plays a role in the stress response system, affects the degree of susceptibility to chronic stress; thus, resilience may be a concept that can be a therapeutic target in chronic pain disorders (25). In a study comparing two groups with high and low psychological resilience among patients with chronic pain disorder, there were significant differences between the groups in terms of their coping styles, pain orientations and beliefs, tendency to catastrophizing, positive and negative social responses to pain, attention to their health, and adherence to drug treatments (5). Furthermore, psychological resilience has been shown to be associated with symptom burden in patients with fibromyalgia (26). In a study investigating the protective role of psychological resilience in breast cancer patients with FMS, it was reported that psychological resilience was associated with pain, fatigue and functional capacity (27). Similarly, we have found a significant relationship between the scores of all subscales of the psychological resilience scale (except for the family cohesion subscale) and the scores of the scales that reflect symptom severity or level of functionality in patients with fibromyalgia.

After checking the scores of religious belief and forgiveness scales with partial correlation analysis, correlations between psychological resilience and symptom burden were determined. When the effect of religious belief level on psychological resilience was eliminated by that statistical method, it was found that the significant relationships between future perceptions subscale and the total fibromyalgia symptom level and the significant relationships between social resources subscale and the level of functionality in patients with fibromyalgia had disappeared. When the effect of the forgiveness scale on psychological resilience was eliminated, it was found that the significant relationship between

the social resources subscale and the level of functionality in patients with fibromyalgia had disappeared. In a review article assessing whether religiousness and spirituality were influential on mental health, these attributes were regarded as the leading reasons for preferring religious coping ways in psychiatric and physical diseases due to the fact that religious belief provides some sense of meaning and purpose in difficult living conditions; thereby enabling the assertion of an optimistic and hopeful worldview that reduces the need for personal control over events; thus, increasing mental support and reducing loneliness (24). The current study was partially based on this claim and we hypothesized that religious belief could reduce the severity of fibromyalgia symptoms by positively affecting future perception –as it was suggested that religious belief gives a sense of meaning and purpose in difficult living conditions, provides an optimistic and hopeful worldview and reduces the need for personal control over events. Our take on this topic was that, the fundamental Islamic belief of "destiny is in the hands of Allah (the omnipotent god of Islam)" would represent this function. We concluded that religious beliefs providing support to reduce loneliness can positively affect the social resources subscale, thereby increasing the functionality of patients with fibromyalgia. It is also notable that worship-related practices with socializing effects such as performing Salaat (Islamic prayer which is performed 5 times a day) as a community in mosques may also cause a positive effect in this regard.

Our results indicate that forgiveness has no effect on psychological resilience. However, when the effect of forgiveness was eliminated statistically, it was found that the significance of the social resources subscale's impact on functionality in fibromyalgia had disappeared, suggesting that forgiveness has an effect, albeit very limited. It has been claimed that forgiveness contributes to psychological well-being by providing less negative affect and more positive relationships (28). We thought that forgiveness's positive relationships might explain the impact it had on the social resources subscale. We thought that the resultant positive effects of forgiveness could explain the influence on the social resources subsection. We interpreted this relationship to the positivity provided by forgiveness on relationships, which possibly helped the person to have increased social support, thereby causing a positive influence on function in fibromyalgia.

We think that the most important limitation of our study may be associated with the possibility that individuals were not comfortable in responding accurately to the various scales employed, especially the religious attitude scale. This was because, in our country, people may not want to objectively answer questions related to religious belief due to a fear of stigmatization. Although they were told that their information would not be shared and the results would be de-identified prior to use in this research, we believe that subjects may have had a tendency to provide answers that would be more acceptable in our country. The second limitation is the limited sample size. The results of studies to be conducted with the participation of more fibromyalgia patients and in different populations may differ from our study.

Conclusion

In this study, it has been found that religious belief and forgiveness levels did not have a direct effect on fibromyalgia symptoms. Most of the subscales of psychological resilience were found to be associated with the severity of fibromyalgia symptoms. While religious belief strengthened the relationship between psychological resilience subscales and fibromyalgia symptom burden, forgiveness was observed to have a very weak effect on these relationships. We think that our study once again draws attention to the concept of psychological resilience in fibromyalgia patients and will be a resource for further research in which the factors affecting this concept will be investigated. In future studies, with the participation

of more people, examining the effects of living in different religions and different populations on the symptoms of fibromyalgia may reinforce the results of our study.

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