

## The Relationship of Intimate Partner Violence With Psychiatric Disorders and Severity of Pain Among Female Patients With Fibromyalgia

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### ABSTRACT

**Objectives:** This study aims to compare the prevalence of intimate partner violence and comorbid psychiatric disorders among patients with fibromyalgia syndrome (FMS) and healthy controls and also to investigate the relationship of intimate partner violence with psychiatric disorders and severity of pain in FMS patients.

**Patients and methods:** The study group consisted of 136 females including 68 patients with FMS (mean age 43±10.4 years; range, 25 to 70 years) and 68 FMS-free healthy females (mean age 38.5±11.3 years; range, 22 to 70 years). Following a Structured Clinical Interview for Diagnostic and Statistical Manual-IV Axis I Disorders by a psychiatrist experienced in psychological trauma, Hamilton Depression Rating Scale (HDRS), Hamilton Anxiety Rating Scale (HARS), visual analog scale (VAS) for the severity of pain and Domestic Violence Against Women Scale (DVAWS) were applied.

**Results:** In FMS group, 85% of the patients were diagnosed with mood or anxiety disorder. Almost half of these patients had major depressive disorder. The total scores of DVAWS and all subscales were significantly higher in the FMS group than in the control group ( $p<0.01$ ). The severity of domestic violence were related to the presence of any psychiatric disorder only in FMS patients ( $p<0.01$ ). Almost half of the FMS patients with high DVAWS score had comorbid mood and anxiety disorders. There was a significant positive correlation between the total scores of DVAWS, HDRS, HARS, and VAS ( $p<0.01$ ).

**Conclusion:** Although the etiology of FMS is still uncertain, psychosocial factors may play role as risk factors. Therefore, a multidisciplinary approach to the treatment should be considered.

**Keywords:** Anxiety; depression; domestic violence; fibromyalgia syndrome; intimate partner violence; pain.

Fibromyalgia syndrome (FMS) is a non-articular rheumatic disease characterized by chronic, widespread body pain in combination with excessive tenderness at specific anatomical sites.<sup>1</sup> It is more prevalent in females than males and complaints such as fatigue, sleep disturbances, deterioration of cognitive functions, anxiety and depression are frequently reported in these patients.<sup>2</sup> Although the etiology of FMS

is still unknown, recent investigations reveal that psychosocial stress factors might well play a role.<sup>3</sup> It has been reported that not only life-time sexual and physical abuse<sup>4,5</sup> but also emotional abuse and neglect prevalences are higher in FMS patients.<sup>5</sup> The abnormal responses to stress response stimulating factors are considered to play a crucial role in the emergence of FMS. The responses of the neuroendocrinological system

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of these patients to the stressors are different.<sup>6</sup> This disturbance in the neuroendocrinological response may be genetic or due to stressful life events like history of abuse.<sup>7</sup> Trauma and major life stress likely do not cause FMS per se but may trigger the symptoms in susceptible individuals. There is no doubt that experience of an abusive relationship is a maintained stress situation. In this context, intimate partner violence against females should also be considered as one of the possible persistent risk factors in the emergence of FMS.<sup>8</sup>

Domestic violence against females is regarded as an important public health problem leading to physical and mental health problems.<sup>9</sup> In addition to psychiatric disorders, one of the major reasons for the violence victims to apply to health institutions is chronic pain.<sup>9</sup> Thus, it is important to consider domestic violence in the diagnosis of patients with unexplained chronic pain such as headache, myofascial pain and fibromyalgia.<sup>11,12</sup> There are several studies yielding higher prevalence of certain types of lifetime abuse in FMS<sup>12</sup> while there is only one study from Turkey exploring the relationship of domestic violence and FMS, to the best of our knowledge.<sup>13</sup>

Given the dearth of the literature and the importance of cultural issues on this topic, in this study, we aimed to compare the prevalence of intimate partner violence and comorbid psychiatric disorders among patients with FMS and healthy controls and also to investigate the relationship of intimate partner violence with psychiatric disorders and severity of pain in FMS patients.

## PATIENTS AND METHODS

The study included 68 consecutive female patients (mean age  $43 \pm 10.4$  years; range, 25 to 70 years) who applied to the outpatient clinic of Kocaeli University Medical Faculty Physical Medicine and Rehabilitation Department between February 2014 and June 2014 and diagnosed as FMS by a physician according to the American College of Rheumatology 2010 criteria for FMS.<sup>14</sup> Patients who were illiterate, who had significant visual, hearing and cognitive impairment of communication, accompanied by inflammatory rheumatic disease or autoimmune disease, patients with mental retardation or psychotic

disorder, those with steroid or substance use, or those with chronic neurological disease with significant cognitive decline were excluded. Control group consisted of 68 females (mean age  $38.5 \pm 11.3$  years; range, 22 to 70 years) recruited from the volunteering relatives of patients who applied to Ear Nose Throat Department and who were not diagnosed with FMS. Control group was also questioned in terms of the exclusion criteria. Toxicology drug screening was performed to exclude substance abuse. In order to guarantee females' safety, patients who were accompanied by their husbands were excluded, following the "Ethical and Safety Recommendations for Research on Domestic Violence Against Women".<sup>15</sup> The study protocol was approved by the Kocaeli University Medical Faculty Ethics Committee (Ethics ID: 2014/55). A written informed consent was obtained from each participant. The study was conducted in accordance with the principles of the Declaration of Helsinki.

### Instruments

*Sociodemographic Data Form:* In this form, participants were asked about personal information like age, marital status, educational status, working status, income level, additional medical illnesses, current smoking, alcohol use and history of psychiatric disorders.

*Structured Clinical Interview for Diagnostic and Statistical Manual-IV Axis I Disorders (SCID-I):* This is a semi-structured clinical interview developed for use by mental health professionals.<sup>16</sup> SCID-I allows to diagnose both present and life-time axis I mental disorders. In this study, we used the modules for depression and anxiety disorders only and focused on the current diagnoses.

*Hamilton Depression Rating Scale (HDRS):* This 17-item scale questioning the depressive complaints in the last week is administered by the physician.<sup>17</sup> The scoring is as follows: 0-7 points indicate "no depression", 8-15 points indicate "mild depression", 16-28 points indicate "moderate depression", and 29 points and above indicate "severe depression". The Turkish version of the form was validated.<sup>18</sup>

*Hamilton Anxiety Rating Scale (HARS):* This physician-administered scale consists

of 14 questions about both psychological and physical symptoms of anxiety.<sup>19</sup> It is evaluated as follows: 0-5 points indicate “no anxiety”, 6-14 points indicate minor anxiety”, and 15 points and above indicate “major anxiety”. The Turkish version of the form was validated.<sup>20</sup>

**Visual analog scale (VAS):** This scale is used to determine the severity of pain. VAS is a 10 cm line, left side representing no pain and right side representing intolerable pain. Patients were asked to mark the severity of the pain they felt on this line. Then, the distance to the starting point of the marking was measured with a ruler and recorded.<sup>21</sup>

**Domestic Violence Against Women Scale (DVAWS):** This five-point likert-type scale, which was designed by Yanikkerem and Saruhan<sup>22</sup> for Turkish female population, consists of 90 questions. The Cronbach’s alpha reliability coefficient for the scale is 0.979. The scale has nine subscales as physical violence (damaging the integrity of female’s body); emotional violence such as insult, contempt; economic violence; social violence and isolation

of female; contempt of the sex of the female and threatening behaviors against female; sexual violence against female; negative affectivity of the female towards herself; worries and fears about husband; the use of male privilege and the lack of sharing in marriage. Scoring is as follows: 0-2.00 is interpreted as very low; 2.01-4.00 as low; 4.01-6.00 as moderate; 6.01-8.00 as high and 8.01-10.00 as very high level of violence.

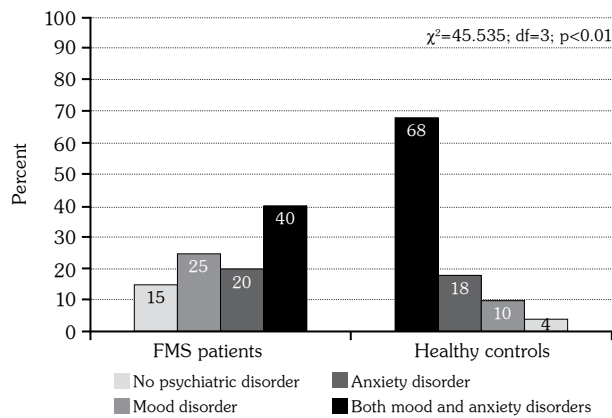
### Statistical analysis

The data obtained in the study were analyzed using the Statistical Program for Social Sciences version 16.0 (SPSS Inc., Chicago, IL, USA). Chi square test was used to compare categorical data. Normal distribution of numerical variables was investigated by visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov test). T-test was used for binary comparison of numerical data with normal distribution. For the analysis of non-normally distributed numerical data, Mann-Whitney U test was used to compare two groups. The relationship between numerical variables with non-normal distribution was

**Table 1.** Sociodemographic characteristics of fibromyalgia syndrome patients and healthy controls

	FMS patients		Healthy controls		p
	n	%	n	%	
Marital status					<0.01
Married	48	70.6	64	94.1	
Divorced/widower	20	29.4	4	5.9	
Educational status					<0.01
Elementary school	37	54.4	22	32.4	
Secondary school and high school	16	23.5	20	29.4	
College	15	22.1	26	38.2	
Working status	38	55.9	47	69.1	0.111
Yes					
Socioeconomic status					0.087
Low	22	32.4	9	13.2	
Moderate	32	47.1	45	66.2	
High	14	20.6	14	20.6	
Current smoking	26	38.2	15	22.1	0.040
Yes					
Alcohol	9	13.2	4	5.9	0.243
Yes					
Accompanying medical disorder	55	80.9	29	42.6	<0.01
Yes					
History of psychiatric disorder	50	84.5	14	20.6	<0.01
Yes					
Family history of psychiatric disorder	31	45.6	12	17.6	<0.01
Yes					

FMS: Fibromyalgia syndrome.



**Figure 1.** Distribution of mood and anxiety disorders among study groups. FMS: Fibromyalgia syndrome.

investigated by Spearman correlation analysis. A *p* value <0.05 was considered statistically significant.

## RESULTS

Mean ages were 43±10.4 years for FMS patients and 38.5±11.3 for healthy controls (*p*=0.017). Sociodemographic characteristics are presented in Table 1.

The rate of patients diagnosed with any mood or anxiety disorder using SCID-I was significantly higher in FMS group (85%) compared to healthy control group (32%) (*p*<0.01). The distribution of psychiatric comorbidity in general is shown in Figure 1. While major depressive disorder (42.6%) was the most common psychiatric diagnosis in

females with FMS, the percentage of patients with post-traumatic stress disorder was also quite high (14.7%). The distribution of mood and anxiety disorders among study groups is presented in Table 2.

The median level of domestic violence evaluated with total score of DVAWS was 4.66 (interquartile range [IQR]=3.46) in females with FMS. Although almost all subtypes of violence were significantly higher in FMS group, the highest subscale score belonged to “negative affectivity of the female towards herself” with a median score of 6.5 (IQR=4.38) (Table 3). The number of FMS patients with DVAWS total score higher than 6 (high) was 24 (35.2%). Of these FMS patients reporting high levels of domestic violence, seven (29.1%) had mood disorders, four (16.7%) had anxiety disorders, and 13 (54.2%) had both mood and anxiety disorders.

We compared the domestic violence (DVAWS-total) scores with regard to the presence of any psychiatric disorder among study groups (Table 4). Only in FMS group, DVAWS scores were significantly higher in patients with any psychiatric disorder compared to that of patients without psychiatric diagnosis (*p*<0.01).

In addition to actual psychiatric diagnoses with SCID-I, mean anxiety and depression levels were determined by HARS and HDRS to investigate the correlation with pain and domestic violence levels. Mean HARS scores were 22.28±13.32 in FMS group and

**Table 2.** Comorbid psychiatric disorders

	FMS patients		Healthy controls		<i>p</i>
	n	%	n	%	
Mood disorders					<0.01
Major depressive disorder	29	42.6	4	5.9	
Dysthymic disorder	6	8.8	3	4.4	
Depressive disorder, not otherwise specified	9	13.2	8	11.8	
Anxiety disorder					<0.01
Panic disorder	4	5.9	3	4.4	
Obsessive compulsive disorder	8	11.8	0	0	
General anxiety disorder	5	7.4	0	0	
Social anxiety disorder	2	2.9	2	2.9	
Anxiety disorder, not otherwise specified	12	17.6	5	7.4	
Post-traumatic stress disorder	10	14.7	0	0	

FMS: Fibromyalgia syndrome; \* These disorders are not exclusive of one another.

**Table 3.** Characteristics of domestic violence based on Domestic Violence Against Women Scale total and subscale scores

	FMS patients		Healthy controls		p
	Median	IQR	Median	IQR	
Physical violence	3.27	3.38	2.07	0.38	<0.01
Emotional violence	5.25	3.75	2.25	1.50	<0.01
Economic violence	6.22	3.51	4.44	2.89	<0.01
Social violence and isolation	4.57	4.15	3.14	1.67	<0.01
Contempt of the sex of the female and threatening behaviors	3.66	4.39	2.22	0.88	<0.01
Sexual violence	5.14	3.36	2.28	1.71	<0.01
Negative affectivity of the female towards herself	6.5	4.38	3	1.50	<0.01
Worries and fears about husband	5.86	4.93	2.85	1.72	<0.01
The use of male privilege and the lack of sharing in marriage	6.1	3.55	4.2	2.00	<0.01
The total score of Domestic Violence Against Women Scale	4.66	3.46	2.94	0.92	<0.01

FMS: Fibromyalgia syndrome; IQR: Interquartile range.

**Table 4.** Comparison of domestic violence scores according to presence of any psychiatric disorder

	DVAWS total score						p
	Presence of any psychiatric disorder (n=80)			No psychiatric disorder (n=56)			
	n	Median	IQR	n	Median	IQR	
FMS patients (n=68)	58	4.84	3.54	10	2.85	1.68	<0.01
Controls (n=68)	22	3.08	1.15	46	2.91	0.80	0.273

DVAWS: Domestic Violence Against Women Scale; IQR: Interquartile range; FMS: Fibromyalgia syndrome.

6.56±7.88 in healthy controls (p<0.01). Mean HDRS scores were 24.59±14.75 in FMS group and 9.13±9.42 in healthy controls (p<0.01). In the FMS group, the mean VAS score was 6.25±2.03, which was interpreted as moderate pain. Pain severity had positive correlations with both domestic violence levels and psychiatric measures. However, the strongest correlation of all was between DVAWS and VAS (r=0.707; p<0.01) (Table 5).

**Table 5.** Correlation analysis in FMS patients

	VAS	HARS	HDRS
DVAWS	0.707*	0.432*	0.330*
VAS		0.490*	0.502*
HARS			0.327*

FMS: Fibromyalgia syndrome; DVAWS: Domestic Violence Against Women Scale; VAS: Visual analog scale for pain; HARS: Hamilton Anxiety Rating Scale; HDRS: Hamilton Depression Rating Scale; \* p<0.01.

## DISCUSSION

According to data obtained in our study, both psychiatric comorbidities and domestic violence were more common in FMS patients than in females without this syndrome. In terms of the relationship of domestic violence with regard to the presence of psychiatric comorbidity, we found a significant relationship only in FMS group. Furthermore, the severity of pain in FMS group showed positive correlation not only with the level of intimate partner violence but also with the level of depression and anxiety. There are several studies in the literature investigating the relationship between FMS and domestic violence; however, the number of studies with a detailed and structured psychiatric interview is scarce. Psychiatric questionnaires are mostly used for screening purposes rather than diagnostic purposes. The importance of the therapeutic relationship established during psychiatric interview is obvious to reach accurate results

particularly in sensitive issues such as domestic violence.<sup>12</sup> Thus, in our study, both SCID-I and DVAWS have been performed by a psychiatrist trained in psychological trauma. The patients in need for treatment were referred to the psychiatry outpatient clinic for further follow-up and treatment.

Approximately 85% of females with FMS in our study were diagnosed as having any mood or anxiety disorder. Furthermore, the fact that 40% of these patients had both mood and anxiety disorders showed a more severe condition. In accordance with previous studies, these findings support the association of psychological factors in FMS.<sup>2,23,24</sup> Almost 43% of our FMS group were diagnosed as major depression, which is a serious clinical condition and needs appropriate psychiatric treatment. Posttraumatic stress disorder (PTSD), which might well be another important psychiatric disorder related to the presence of domestic violence, was diagnosed in 14.6% of FMS patients similar to the literature.<sup>25-27</sup> These patients may constitute the high risk group in terms of compliance and treatment resistance, which emphasizes the importance of a multidisciplinary treatment approach including a psychiatrist.

Recently, it has been stated that environmental trigger factors may play a role in the etiopathogenesis of FMS.<sup>2</sup> Studies have indicated that life-time sexual and physical abuse is associated with an increased risk for FMS.<sup>12</sup> However, previous research mostly focused on childhood maltreatment in the etiology of FMS,<sup>23</sup> whereas only a few studies have tried to explore the association with domestic violence against females.<sup>8</sup> To our knowledge, there is only one study from Turkey investigating domestic violence in FMS.<sup>13</sup> However, our study is the first where a structured clinical interview was held yielding valid psychiatric diagnoses in addition to the detailed domestic violence survey. Not only the total score but also all subtypes of domestic violence were higher in FMS group. The average DVAWS total score revealed moderate level of domestic violence in FMS group whereas it was low in the control group. Nevertheless, the subscales covering economic violence; negative affectivity of the female towards herself; and the use of male privilege and lack of sharing in marriage yielded high levels of violence in females with FMS. It is noteworthy to keep in mind that delicate subjects

like intimate partner violence are not easy to explore in routine clinical practice and such issues may have many invisible and underestimated dimensions.

In a similar study conducted by Ruiz-Pérez et al.,<sup>8</sup> violence against females was reported to be more prevalent in FMS and psychological distress was found to be positively associated with FMS. Besides, they stressed that their finding about the consequences of emotional abuse as much as physical and sexual abuse in relation to FMS was a new contribution to the literature. In the study of Özer et al.,<sup>13</sup> which was conducted on 34 FMS patients with no control group, domestic physical violence was reported in 38.2% of the females. Unfortunately, lack of information about the types of domestic violence other than physical violence was stated as a limitation of the study. Nevertheless, the results of our study contribute to the literature reporting that abuse can trigger chronic pain disorders.<sup>5,8,23,28</sup>

Although abuse is speculated to play an important etiological role in patients with FMS, the factors mediating the link between FMS and abuse have often been overlooked. Since FMS has been associated with traumatic events in the literature, these patients might also present with higher levels of psychological distress. Female victims of domestic violence are already known to be at serious risk for anxiety, depression, PTSD and chronic pain.<sup>29,30</sup>

In our study, there was a significant relationship of domestic violence with the presence of psychiatric diagnoses only in FMS group. Also, almost half of the FMS patients reporting high level of domestic violence were diagnosed as having both mood and anxiety disorders. Our FMS group consisted of heterogeneous patients with no information about treatment response. Those patients with multiple psychiatric comorbidities might well constitute the high risk group in terms of compliance and treatment resistance as reported in previous research.<sup>31</sup> Similarly, severity of pain showed positive correlation with both the total score of DVAWS and psychiatric measures of depression and anxiety levels, which is also consistent with the literature.<sup>13,32,33</sup>

The results of our study emphasize that domestic violence is related to anxiety, depression and severity of pain in females with FMS.

However, given the cross-sectional design of the study, we are unable to conclude whether FMS is a consequence of this psychological distress or vice versa. There are inconsistent findings about FMS being a somatic presentation of psychological problems or the presence of FMS leading to higher rates of psychological distress.<sup>8</sup> Nevertheless, this highlights the importance of an interdisciplinary approach to identify intimate partner violence and psychiatric disorders that may have harmful effects on the patient's ability to cope with her FMS symptoms and may lead to a poorer prognosis.

There are some limitations of our study. Our FMS group consisted of heterogeneous participants including either newly diagnosed or treatment-resistant patients. Furthermore, this study was performed on female patients seeking help. So, the results cannot be generalized to the general population. Female patients who admitted with their husbands were excluded. Ethical and Safety Recommendations for Research on Domestic Violence Against Women suggests the application of this exclusion criterion due to the possibility that domestic violence may be higher in this population. Admitting hospital with the husbands may indicate a male control over the female in most Western cultures but it is a controversial issue in our culture. Domestic violence seems to be associated with low sociocultural levels; however, illiterate females were excluded due to the study methodology. Usual possible self-reporting bias of such an intimate and socially unaccepted subject should also be kept in mind. Nevertheless, these limitations may have underestimated rather than overestimating the real prevalence of abuse and its associations.

In conclusion, FMS with ongoing controversies regarding its diagnosis and management, has become an important study field in recent years. It is associated with many physical and mental complaints in addition to pain. Although pharmacological treatment has prevailed to date, it is not totally satisfying. The association of intimate partner violence and FMS may provide a new perspective when considering alternative therapeutic strategies. Psychiatric evaluation and individualized analysis of each patient particularly in the context of treatment resistance may make significant contribution towards offering appropriate treatment and allowing an interdisciplinary approach. However,

considering its consequences, questioning domestic violence should be a routine part of patients' examination, particularly in those with chronic pain.

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