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The Relationship Between Psychological Factors and Health Care-Seeking Behavior in Fibromyalgia Patients

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Abstract

Objective: *The aim of this study was to examine whether cognitive factors, such as attributions, expectations, and anger management style, contribute to the decision to seek medical care for fibromyalgia syndrome (FMS).*

Method: *We recruited 3 groups of subjects; patients from a FMS tertiary care setting, community residents with FMS who had not sought medical care for their FMS symptoms (nonpatients), and healthy controls. In all, 38 FMS nonpatients were compared to 37 FMS patients and 41 healthy controls on measures of anxiety, depression, anger, locus of control (LOC), attributions, pain intensity, and disability, as well as demographic characteristics.*

Results: *The prevalence of FMS non-patients was 2%. There was a significant difference between the 3 groups on the measures of anxiety, depression, LOC, and somatic and normalizing subscale scores of the symptom interpretation questionnaire (SIQ). FMS nonpatients, relative to FMS patients and healthy controls, were characterized by a significantly higher measure of both LOC and normalizing subscale score on the SIQ. There were no differences between the 2 FMS groups in demographical percentage and other psychometric measures. A hierarchical logistic regression model showed that the number of tender points, normalizing attribution style, and depression were independent predictors of help-seeking behavior.*

Conclusion: *The rate of psychiatric and medical history is not related to the FMS syndrome. Expectations and a normalizing attribution style may contribute to help-seeking behavior for FMS.*

Key Words: *FMS, nonpatients, prevalence, locus of control, symptom interpretation questionnaire, help-seek behavior*

INTRODUCTION

FMS (fibromyalgia syndrome) is a medically unexplained condition characterized by symptoms of widespread musculoskeletal pain, tenderness at multiple anatomic sites, unrefreshing sleep, and fatigue. Although the etiology of FMS is still unknown, it is related to several biologic abnormalities, such as dysregulation of sleep, neuroendocrine function disorder, and changes in regional cerebral blood flow (Richards and Cleare, 2000; Mountz et al., 1995).

Research shows that the severity of FMS is not related to the degree of tissue damage, but to psychological factors, such as anxiety and depression (Bradley and McKenree-Smith, 2002; Macbeth and Silman, 2001). Psychiatric disorders and psychological distress are the most important factors that may influence the behavior of patients with FMS.

Some researchers suggest that psychiatric disorders also have a role in the development of FMS. Studies reported a high prevalence of psychiatric disorders in patients with FMS and showed that psychiatric disorders existed before the initiation of FMS in the majority of cases (Hudson et al., 1985). It was also proposed that FMS is a part of the affective disorders spectrum (Hudson et al., 1992). In order to support these findings, Aaron et al. (1996) investigated whether the relationship between FMS, and psychiatric disorders and psychological distress exists in individuals with FMS who do not seek help for their complaints. Aaron et al. (1996) investigated 3 groups in terms of lifetime frequency of psychiatric disorders and current

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psychological distress using a standardized interview questionnaire; FMS patients treated in a tertiary care setting, individuals who fulfilled the diagnostic criteria for FMS, but did not seek help for their pain in last past 10 years, and healthy individuals. They concluded that higher levels of lifetime prevalence of psychiatric diagnoses and psychological distress were specific to the FMS group who sought treatment and that there were no differences between the healthy controls and the FMS group that did not seek treatment, in terms of the number of psychiatric diagnoses. Psychological distress was also found to be significantly higher in the FMS group that did not seek treatment in comparison to the control group. They also suggest that FMS is not related to psychiatric diagnoses and that a higher number of lifetime psychiatric diagnoses contribute to help-seeking behavior.

Cognitive schemas may have an effect on the experience of illness and illness behavior. Psychology and anthropology explain how cognitive schemas and cultural belief patterns might cause distress and illness (Kirmayer et al., 1994). It was shown that cognitive factors, such as personal expectations and beliefs, play a role in adjustment to chronic illness by way of emotional regulation and behavioral reactions (Crisson and Keefe, 1988). The concept of locus of control (LOC) was developed for investigating patient expectations regarding control of the factors that caused their illness. Individuals who find themselves responsible for the situation and believe that they can change fate are categorized as internals. On the other hand, individuals who believe that they have no power to change the situation due to the effects of uncontrollable factors, such as chance, luck, and fate, are called externals.

The way symptoms are perceived affects health care-seeking behavior, communication with doctors, adjustment to treatment, and therefore, the course of the illness. According to the attribution theory developed by Robbins and Kirmayer (1991), when bodily symptoms are evaluated as due to external and environmental factors they are normalized for the individual. When this normalization does not take place, individuals evaluate their sensations as abnormal and might develop pathological somatic or psychological explanations about their illnesses.

These findings demonstrate the importance of investigating the health care-seeking behavior in patients with FMS. Comparisons made with healthy individuals and individuals with fibromyalgia will lead to a better understanding of the psychiatric aspects of this chronic illness. The aim of this study was to evaluate cognitive factors, such as LOC and symptom attribution in patients with FMS, and to investigate the effects of these cognitive factors in health care-seeking behavior, and thus, develop a better understanding of the etiopathology of FMS.

METHODS

Sample

This study compared 3 groups of subjects; 37 FMS patients who were treated as outpatients between June and December 2003 at Karadeniz Technical University Medical Faculty (KTU-MF) Physical Medicine and Rehabilitation (PMR) Clinic, 38 community residents who reported pain problems and were diagnosed with FMS, but had not sought medical care for their FMS symptoms (FMS nonpatients), and 34 healthy controls composed of women without any physical or psychiatric disorders (healthy controls). Participants were assessed in the psychiatry department using a sociodemographic questionnaire and psychometric rating scales. After providing the necessary information about the tests, subjects were assisted in answering the questionnaires by one of the researchers (HG). For illiterate subjects, one of the researchers (MYG) read the questions and filled in the questionnaire according to the answers of the subject. The evaluation was conducted with the Structured Clinical Interview for DSM-III-R (SCID-I). Patients who were diagnosed with mental retardation, dementia, cognitive disorder, psychotic disorder, or with a physical disorder that might affect general health were excluded from the study. The KTU-MF Ethics Committee approved the study. All participants were informed about the study and written informed consent was given by all participants.

The participants in the FMS nonpatient group were chosen among women in the Trabzon FMS prevalence study (Topbaş et al., 2005) who did not seek treatment for their pain complaints for at least 10 years. The target of the study was to reach 2000 women; however, only 1930 patients were reached (96.5%). Patients who had experienced pain for at least 3 months were considered to be candidates for the assessment and 296 patients who fulfilled this criterion were invited to the assessment. In all, 70 of the 285 individuals that responded to the invitation were diagnosed with FMS according to the diagnostic criteria of the American Rheumatology Association (ARA). ARA diagnostic criteria includes generalized pain for at least 3 months (pain is considered

Table I. Socio-Demographic Characteristics of the FMS Groups.

	FMS nonpatients		FMS patients			
	Number	%	Number	%	x^2	P
Marital status					2.511	NS
Married	30	78.9	34	91.9		
Other	8	21.1	3	8.9		
Economical status					1.088	NS
Poor	9	23.7	6	16.2		
Fair	26	68.4	28	75.7		
Good	3	7.9	3	8.1		
Medical History					1.157	NS
No	20	52.6	24	64.9		
Yes	18	47.4	13	35.1		
Psychiatric History					0.173	NS
No	25	65.8	26	70.3		
Yes	13	34.2	11	29.7		
Family History					0.653	NS
No	29	76.3	31	83.8		
Yes	9	23.7	6	16.2		

FMS: Fibromyalgia Syndrome, NS: Not significant.

widespread when it is in both sides of the body and above and below the waist), axial skeletal pain must be present, and pain in 11 of 18 (9 bilateral) tender point sites on digital palpation. In total, 40 individuals who had not sought treatment for pain for the last 10 years were invited to participate in the study. Two of them declined to participate and the study was conducted with 38 women diagnosed with FMS.

The patients in the FMS patient group were chosen among the outpatients who presented to the KTU-MF PMR Clinic for pain complaints. Thirty-one of the 41 consecutively presented patients were included in the study, though 4 were excluded as they failed to complete the tests.

Women without pain complaints from the Trabzon FMS prevalence study who were free of any psychiatric and physiological problems comprised the control group (healthy controls). After face-to-face interviews, and physical and mental examinations, women who were free of any kind of pathology were included in the control group.

Instruments

Visual Analogue Scale (VAS)

VAS was developed by Price et al. (1983) in order to measure the severity of pain. In this scale, which uses a horizontal line 10 cm in length, patients are expected to mark the point that they feel represents the severity of their pain. The VAS score is determined by measuring the distance from the point that the patient marks to the end of the line.

The Fibromyalgia Impact Questionnaire (FIQ)

FIQ, developed by Burckhardt et al. (1991), is a reliable and valid instrument that measures the conditions and loss of functioning in fibromyalgia patients. The reliability and validity study of the Turkish version was conducted by Sarmer et al. (2000). FIQ involves 10 self-rating questions. The first item of the questionnaire involves 10 questions that are rated on a 3-point Likert-type scale. The second and third items determine the degree of impairment caused by the illness. The remaining 7 items involve visual analogue scales (VAS). The highest score on FIQ is 100.

Table II. Psychological Variables of the Study Groups.

	FMS nonpatients	FMS patients	Healthy controls		
	Mean ± SD	Mean ± SD	Mean ± SD	t/F*/zª	P
Duration of the illnessª	6.3 ± 6.5	5.6 ± 5.7		–0.62	NS
Number of tender point sites	12.1 ± 1.2	12.7 ± 1.7		–1.98	NS
VAS	5.8 ± 1.9	6.0 ± 2.0		–0.49	NS
FIQ	5.5 ± 1.2	5.5 ± 1.4		–0.04	NS
State Anger*	25.2 ± 7.9	26.0 ± 8.2	22.8 ± 6.7	1.94	NS
Anger In*	18.6 ± 5.4	17.6 ± 5.4	16.4 ± 4.1	2.08	NS
Anger Out*	16.1 ± 5.3	16.9 ± 6.0	16.3 ± 4.8	0.24	NS
Anger Control*	21.2 ± 5.9	20.4 ± 6.9	20.3 ± 5.3	0.26	NS
LOC*	12.8 ± 3.2	10.5 ± 3.7	11.7 ± 3.0	4.37	0.02
SIQ-psychologizing*	15.3 ± 7.8	14.3 ± 7.0	17.6 ± 8.5	1.82	NS
SIQ-somatization*	14.1 ± 8.7	10.7 ± 5.2	6.1 ± 5.2	14.48	< 0.01
SIQ-normalization*	14.4 ± 5.0	9.0 ± 4.5	11.6 ± 4.6	12.20	< 0.01
BAI²	32.5 ± 11.5	27.4 ± 15.2	16.1 ± 7.6	34.52	< 0.01
BDI*	21.6 ± 10.2	18.6 ± 10.8	10.0 ± 4.4	18.60	< 0.01

FMS: Fibromyalgia Syndrome, VAS: Visual Analogue Scale ,
FIQ=: The Fibromyalgia Impact Questionnaire, LOC= Locus of Control,
SIQ= Symptom Interpretation Questionnaire, BAI: Beck Anxiety Inventory,
BDI: Beck Depression Inventory,
NS: Not significant,
SD=: Standard Deviation.
* ANOVA, LO; FMS non-patient > FMS, FMS non-patient = control, FMS = control (Post Hoc LSD),
SIQ-somatization; FMS non-patient = FMS > control (Post Hoc LSD),
SIQ-normalization; FMS non-patient > control > FMS (Post Hoc LSD),
BDI; FMS non-patient = FMS > control (Post Hoc LSD),
² Kruskal-Wallis, BAI; FMS non-patient = FMS > control (Post Hoc Mann-Whitney U),
ª Mann-Whitney U.

Rotter's of Internal-External Locus of Control Scale (LOC)

The scale was originally developed by Rotter in 1966) and the Turkish reliability and validity study was conducted by Dağ (1991). It measures the general expectation or belief about external (chance or fate) or internal sources of control. It is a self-rating scale with 29 items. Each item involves 2 choices indicated by letters "a" and "b". While "a" is scored as 1 in some of the items (12 items), in other items "b" is scored as 1. Higher scores indicate increased belief in external control.

State-Trait Anger Expression Inventory (STAXI)

STAXI was developed by Spielberger (1983) and the Turkish reliability and validity study was conducted by Özer (1994). STAXI is a self-rating scale with 34 items, which measures the experience and expression of anger. The STAXI also contains 4 sub-scales designed to assess 4 different dimensions of the expression of anger: (a) Anger-In (8 items), (b) Anger-Out (8 items), (c) Anger-Control (8 items), and d) State anger (10 items). It is rated on a four-point scale (not at all, a little, sometimes, and always).

Symptom Interpretation Questionnaire (SIQ)

SIQ was developed by Robbins and Kirmayer (1991) and the Turkish reliability and validity study was conducted by Güleç and Sayar (2005). This self-report questionnaire surveys attributions of 13 common somatic symptoms whose etiologies are ambiguous in nature. For each somatic symptom, respondents rate on a four-point scale. SIQ aims to detect the attributional style of an individual. According to attribution theory, individuals attribute generalized physical symptoms to emotional distress (psychological), physical illness (somatic), or external and environmental events (normalizing).

Table III. Relationships Between LOC and SIQ-Normalization with Other Variables in FMS Groups.

	FMS nonpatients				FMS patients			
	LOC		SIQ- normalization		LOC		SIQ- normalization	
	r	p	r	p	r	p	r	p
Age	0.01	NS	0.32	NS	–0.30	NS	-0.01	NS
Year of education*	0.01	NS	–0.32	0.05	0.06	NS	0.02	NS
Duration of the illness	–0.04	NS	0.38	0.02	0.04	NS	–0.03	NS
Number of tender point sites	0.16	NS	–0.05	NS	0.03	NS	0.07	NS
VAS	–0.06	NS	0.30	NS	0.35	0.03	–0.15	NS
FIQ	–0.07	NS	0.33	0.04	0.18	NS	–0.03	NS
State Anger	–0.22	NS	0.28	NS	0.30	NS	–0.27	NS
Anger-Control	0.04	NS	–0.01	NS	–0.12	NS	0.12	NS
SIQ-psychologizing	–0.21	NS	0.20	NS	0.25	NS	0.29	NS
SIQ-somatization	0.06	NS	0.42	0.01	0.05	NS	0.29	NS
BDI	–0.37	0.02	0.23	NS	0.19	NS	0.06	NS
BAI*	–0.12	NS	0.08	NS	0.25	NS	–0.03	NS
LOC		NS	–0.19	NS		NS	–0.08	NS
SIQ-normalization	–0.19	NS		NS	–0.08	NS		NS

FMS: Fibromyalgia Syndrome, VAS: Visual Analogue Scale ,
FIQ: The Fibromyalgia Impact Questionnaire, LOC: Locus of Control,
SIQ: Symptom Interpretation Questionnaire, BAI: Beck Anxiety Inventory,
BDI: Beck Depression Inventory,
NS: Not significant,
* Spearman's correlation.

Beck Depression Inventory (BDI)

BDI was developed by Beck et al. (1961) and the Turkish reliability and validity study was conducted by Hisli (1988). The BDI is a 21-item self-report inventory measuring characteristic attitudes and somatic, emotional, cognitive, and motivational symptoms of depression. The highest score on the BDI is 63 and higher scores indicate greater severity of depression.

Beck Anxiety Inventory (BAI)

BAI was developed by Beck et al. (1988) and the Turkish reliability and validity study was conducted by Ulusoy et al. (1998). It measures the frequency of anxiety symptoms. It is a 21-item self-rating Likert-type scale. Higher scores indicate greater severity of anxiety.

Statistical Analyses

The adequacy of the findings to normal distribution was examined with the Kolmogorov-Smirnov test in all groups. ANOVA was used in the analysis of data with normal distribution and post-hoc analyses were conducted with the LSD test. The Kruskal-Wallis test was used in the analyses of data that did not display a normal distribution and the Mann-Whitney U test was used for the post-hoc analyses. Correlation analyses were conducted with Pearson and Spearman methods. In the analyses of census data, the chi-square test was used (when the expected value was < 5, Fishers exact chi-square test was used). Logistic regression analysis was conducted in order to predict healthcare-seeking behavior. The level of significance was accepted as $P < 0.05$.

RESULTS

The sociodemographic findings are presented in Table I. The age range in the FMS patient group (n= 37) was 24-65 years (mean: 43.1 ± 10.4 years). In the FMS nonpatient group (n = 38) the age range was 23-66 years (mean: 44.0 ± 10.8 years). Age of the control group

Table IV. Prediction of Health Care Seeking Behavior in FMS Groups.

Factors	OR	95% CI	P
Number of tender point sites	1.95	1.08-3.53	0.03
FIQ	1.43	0.81-2.54	NS
SIQ-psychologizing	1.08	0.95-1.21	NS
SIQ-somatization	1.00	0.89-1.12	NS
SIQ-normalization	0.67	0.54-0.82	< 0.01
BDI	0.89	0.81-0.98	< 0.01
LOC	0.65	0.50-0.85	NS

FIQ: The Fibromyalgia Impact Questionnaire, LOC: Locus of Control.
SIQ: Symptom Interpretation Questionnaire, BDI: Beck Depression Inventory.

ranged from 23-62 years (mean: 44.0 ± 10.4 years). There were no statistical differences in terms of duration of education, marital status, economic status, duration of the illness, and number of painful sites between the 2 FMS groups.

Differences in the psychometric variables are presented in Table II. There were no statistical differences in the scores of the STAXI among the 3 groups. When the LOC test is considered, the difference between the FMS groups and the healthy control was not significant; however, the FMS nonpatient group was found to be more externalizing than the FMS patient group, and this difference was statistically significant (F = 4.370, P= 0.015). There was no difference among the groups in the results of SIQ. Subjects in the FMS groups scored higher than the healthy controls on the somatization sub-scale. On the normalization sub-scale, the differences between all groups were significant. A normalizing attributional style was quite prevalent among the FMS non-patient group.

Correlations among the FMS groups are presented in Table III. In the FMS nonpatient group, the relationships between LOC and depression, and normalization attribution and the duration of education were negative, whereas the relationship between the duration of illness, disability, and a somatization attributional style was positive. In the FMS patient group, there was a positive relationship between LOC and severity of pain.

According to the results of the logistic regression analysis, the number of tender point sites, depression, and a normalizing attributional style increased health care-seeking behavior (1.95, 0.89, and 0.67 times, respectively)

DISCUSSION

This study was conducted in order to evaluate the effects of certain cognitive factors on the presentation and the course of FMS. Cognitive factors, such as attribution of the symptoms and anger management style, and psychometric and sociodemographic factors, such as the duration of the illness, severity of the pain, past psychiatric history, disability, depression, and anxiety were compared among 2 FMS groups and healthy controls. In contrast to the findings of Aaron et al. (1996), we found high levels of psychological distress in both FMS groups. Additionally, we found that the FMS non-patient group was more externalizing and used more normalizing interpretations in comparison to the other 2 groups.

The mean age in all 3 groups was similar. Although the duration of the illness was significantly longer in the FMS non-patient group compared to the FMS patient group, this difference was not significant. Level of education, marital status, family structure, and there were no significant differences in terms of yearly income. We concluded that the design of the study contributed to this similarity among the groups. We believe that using a control group derived from a previous FMS prevalence study (Topbaş et al., 2005) increased the similarity of the control group with the patient groups and increased the validity of this study according to certain factors, such as the development of additional expectations like possible secondary gains in the control group.

There were no differences among the 2 FMS groups in terms of past or current psychiatric illnesses, physical illnesses, history of family psychiatric illness, and number of tender point sites. These findings were not compatible with Aaron et al.'s (1996) study. When we examined the sociodemographic and clinical characteristics of the

groups we found that our subjects were less educated, had fewer tender point sites, and experienced more severe pain than the subjects in Aaron et al.'s (1996) study; however, our questioning the existence of a psychiatric disorder instead of the number of psychiatric disorders limits making comparisons with their study.

In addition, there were no statistical differences between our 2 FMS groups in terms of depression, anxiety, and pain severity scores. These findings are also not compatible with Aaron et al.'s (1996) findings. Higher levels of depression and anxiety found in the FMS patient group in their study were evaluated as contributing to help-seeking behavior and not as a unique feature of FMS, as suggested by Hudson et al. (1985). Failure to support this finding in our study, which used similar groups, can be explained by cultural variations. In this regard, our study supports the importance of cross-cultural differences. Including the FMS nonpatient group as Aaron et al. (1996) did, had an important effect on gaining a deeper understanding of the etiology of FMS. Our study added a different cultural perspective to this understanding.

We found that the subjects in the FMS nonpatient group were more externalizing and engaged in more normalizing interpretations in comparison to the other 2 groups. Less use of normalization in treatment-seeking individuals is a finding that was previously reported in the literature (Sensky et al., 1996; Duddu et al., 2003); however, our findings regarding higher use of normalization in the FMS nonpatient group is a first in the literature. As less use of normalization of the illness symptoms contributed to the treatment-seeking behavior, using normalization in order to seek treatment seems to be the behavioral pattern in the FMS non-patient group. We conclude that these findings regarding differences in the use of normalization attribution might contribute to the understanding of the etiology of FMS. In both conditions, FMS patients differ in terms of normalization in comparison to the control group. Normalization can be an important cognitive factor to take into consideration in the assessment and treatment of FMS.

When the difference between the LOC mean among the groups is considered, we found that externalization, which reflects the belief that the situation cannot be changed due to uncontrolled factors, was significantly more prevalent in the FMS nonpatient group than the FMS patient group. Subjects in both our FMS groups had more affective distress compared to other reports in the literature (Kirmayer and Robbins 1988; Alfici et al., 1989; Güleç et al., 2004; Evren et al., 2005) and used somatization (Güleç and Sayar 2005) more than the control group. Our findings support the psychosomatic nature of FMS. We did not observe higher levels of psychological attributions nor different anger management styles than what are expected in psychosomatic patients.

According to our literature survey, there are no studies on the effects of cognitive factors, such as anger management style, and control and symptom interpretation style, on health care-seeking behavior in medically unexplained symptoms like FMS. There is only one study on the effects of other cognitive factors on health care-seeking behavior in FMS. Kersh et al. (2001) examined the effects of psychosocial variables in FMS patients, such as pain, mood, distress, coping abilities, and expectation style, on health care-seeking behavior. They reported that in addition to an inability to cope with the pain, fatigue, distress, and daily activities, higher levels of pain, affective distress, and daily problems also predicted health care-seeking behavior.

The normalizing interpretation style in our FMS nonpatient group had a negative correlation with the duration of education and a positive correlation with the duration of the illness, disability, and somatization. Longer duration of education might have caused a deeper understanding of the pathological processes in explaining the experienced pain, and thus, to help-seeking behavior. Although prolonged illness can be a result of insufficient illness coping mechanisms, the finding of a positive correlation between disability and a tendency to normalize needs additional evidence. Another finding of this study was the negative relationship between depression and LOC in the FMS nonpatient group. On the other hand, a linear relationship between severity of pain and LOC in the FMS patient group was found. Use of normalizing explanations, the number of tender point sites, and depression significantly predicted health care-seeking behavior. These findings are not compatible with Kersh et al.'s (2001) findings. Although the predicative value of depression was also found in their study, the number of tender point sites was not predicative of health care-seeking behavior (Kersh et al., 2001).

In conclusion, FMS nonpatients used more normalizing attributions than both FMS patients and healthy controls. Cognitive factors, such as externalization and normalizing, influence health care-seeking behavior in FMS patients.

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