

# Fibromyalgia in Men: Comparison of Psychological Features with Women

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**ABSTRACT. Objective.** To describe possible differences in psychological factors in men compared to women with fibromyalgia syndrome (FM).

**Methods.** Forty men and 160 women with FM were evaluated for anxiety, stress, and depression measured by ordinal scales and validated psychological instruments. Clinical and psychological variables were evaluated by a protocol.

**Results.** Both men and women scored high in the psychological variables measured but the results were not significantly different between them.

**Conclusion.** There was no significant difference between men and women with FM in their psychological status. (J Rheumatol 2004;31:2464–7)

*Key Indexing Terms:*

FIBROMYALGIA

GENDER DIFFERENCE

PSYCHOLOGICAL FEATURES

MALE

PSYCHOLOGY

Fibromyalgia syndrome (FM) is a musculoskeletal pain disorder characterized by chronic widespread pain, hypersensitivity to pain upon palpation, and a range of functional disorders<sup>1</sup>. Although there is controversy regarding the frequency of psychological distress in FM, a majority of investigations suggest that patients with FM have significantly more psychological problems than healthy controls and patients with chronic pain diseases with structural pathology, such as rheumatoid arthritis (RA)<sup>2-8</sup>. The vast majority of patients in the FM literature have been female and in epidemiological studies, women have been shown to be more significantly depressed than men<sup>9</sup>. Psychological factors play an important role in FM<sup>2,10</sup>. However, the psychological status of male patients with FM compared with female patients has not been specifically studied. Our study addresses the issue of gender difference in common and important psychological factors in FM. Based on available literature on gender difference in chronic conditions similar to FM, e.g., headaches and irritable bowel syndrome, we hypothesized that there would be no gender difference in psychological status in FM.

## MATERIALS AND METHODS

Forty men and 160 women with FM were included in the study. All patients fulfilled the 1990 American College of Rheumatology (ACR) criteria for the classification of FM<sup>1</sup>. Male study participants were consecutively seen in the outpatient rheumatology clinic of the University of Illinois College of Medicine at Peoria (UICOMP); female participants, seen in the same clinic during the same period of time (1992-2002), were randomly selected. Clinical and psychological variables of the patients were assessed by the same protocol in both groups.

Duration of disease, education, and tender points (TP) were recorded as continuous variables. A visual analog scale (VAS) was used to evaluate global severity of disease, fatigue, and aches and pains. The items were scored on a 0–100 scale, with 100 denoting the worst possible condition. The severity of pain, sleep disturbance, morning fatigue, anxiety, stress, and depression in the previous month were scored on a 1–4 point scale (1 = none, 2 = mild, 3 = moderate, 4 = severe). These variables were dichotomized as none or mild (no) or moderate and severe (yes) as in our previous studies; the decision for this dichotomization was based on the observation that most symptoms among healthy controls were either none or mild, whereas most symptoms among the patients were either moderate or severe<sup>11</sup>. In addition to measuring psychological variables on ordinal scales<sup>1-4</sup>, they were also assessed by Spielberger State-Trait Anxiety Inventory Scale for anxiety (STAI)<sup>12</sup>, Hassles Scale (HS) for current mental stress<sup>13</sup>, and Zung Self-rating Depression Index (ZSDI) for depression<sup>14</sup>. Health status and physical function were assessed by self-administered Health Assessment Questionnaire (HAQ)<sup>15</sup>.

STAI contains scales that measure state (SAI) and trait anxiety (TAI). SAI comprises 20 items that assess the intensity of current anxiety symptoms. TAI consists of 20 items and measures the level and symptoms of anxiety across situations over a long-standing period. Scale scores are obtained on a 4-point Likert-type scale and by summing the ratings for scale items. Scores range from 20 to 80 for both, with higher scores indicating higher levels of anxiety<sup>12,16</sup>. The HS was designed to assess stress due to everyday events. Hassles are events that a person finds annoying or irritating; the scale contains 117 events in which a person can feel hassled. Each event experienced is rated on a severity scale from 1 (somewhat) to 3 (extreme). Scores reported are the sum of the patient's ratings across events. Higher numbers on the HS indicate a greater amount of stress<sup>13</sup>.

ZSDI includes 20 statements; one of the 4 responses is chosen for each statement (1 = none or a little of the time, 2 = some of the time, 3 = good part of the time, 4 = most or all of the time). This scale has been found to

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discriminate well between depressed and non-depressed subjects and between depressive and anxiety reactions. The patients with a score of 50% or higher are accepted as depressed<sup>14,17</sup>. HAQ is a self-administered questionnaire comprising 20 questions on activities of daily living grouped into 8 categories. The final score is expressed using a 0–3 scale<sup>15</sup>. We used HAQDLPI July 1991 items and scored them according to the accompanying “Health Assessment Questionnaire” manual of Stanford University School of Medicine.

Statistical analyses were performed by SPSS for Windows statistics program, Version 10.0. Dichotomized variables were analyzed by chi-square, or Fisher’s exact test when expected frequency in a cell was less than 5. The interval variables were analyzed by Mann-Whitney test to examine significance between the 2 groups. Spearman’s correlations were used to evaluate the relationship between psychological and clinical variables. The differences between correlation values of male and female patients were analyzed by Z transformation test. Because of multiple comparisons, a p value < 0.01 was accepted *a priori* as significant.

## RESULTS

Demographic and clinical characteristics of the patient groups are given in Table 1. No significant differences were observed between male and female patients regarding age, race, duration of disease, and education level. TP count was significantly higher among the female group (p < 0.001). Global severity of disease, fatigue, and aches and pains measured by VAS were similar in both gender groups. Functional status of the groups evaluated by HAQ score was also similar.

Anxiety, stress, and depression evaluated by both ordinal measurements and scores of psychological instruments (SAI, TAI, HS, and ZSDI) were similar in male and female FM patients (p > 0.01) (Table 2). Moreover, values derived by dichotomization of ordinal variables were similar between men and women with no significant differences between the groups.

Correlational analyses between important demographic and clinical (age, duration of disease, education, TP, global severity, fatigue, pain, sleep disturbance, morning fatigue,

Table 1. Demographic and selected clinical characteristics of male and female patients with FM. Results are expressed as mean ± standard deviation unless otherwise defined.

Characteristics	Male, n = 40	Female, n = 160	p
Age, yrs	49.40 ± 12.94	47.13 ± 11.75	0.484
Caucasian, %	95	97.1	0.718
Duration of disease, yrs	11.38 ± 13.26	9.75 ± 10.96	0.424
Education, yrs	14.78 ± 3.53	13.63 ± 2.54	0.137
No. of TP (11–18)	14.27 ± 2.17	16.25 ± 2.07	< 0.001
Global severity (0–100)	71.16 ± 22.01	65.85 ± 21.24	0.071
Fatigue (0–100)	65.95 ± 22.90	66.61 ± 17.51	0.885
Aches and pains (0–100)	65.20 ± 20.51	64.85 ± 16.93	0.492
Moderate/severe pain, %	92.5	93.8	0.726
Sleep disturbance, %	75.0	76.9	0.474
Morning fatigue, %	76.9	80.6	0.375
HAQ (0–3)	0.83 ± 0.73	0.82 ± 0.82	0.895

TP: tender point; HAQ: Health Assessment Questionnaire.

Table 2. Results of psychological variables among the study groups. Results are expressed as mean ± standard deviation unless otherwise defined.

Variable	Male, n = 40	Female, n = 160	p
Anxiety, %	62.5	66.3	0.711
Anxiety (1–4)	2.83 ± 0.93	2.83 ± 0.84	0.999
Stress, %	67.5	64.4	0.853
Stress (1–4)	2.87 ± 0.85	2.76 ± 0.85	0.479
Depression, %	47.5	39.4	0.373
Depression (1–4)	2.42 ± 0.98	2.27 ± 0.90	0.360
SAI	46.16 ± 14.00	43.04 ± 10.90	0.350
TAI	45.85 ± 12.33	44.28 ± 10.97	0.456
HS	64.15 ± 57.94	55.03 ± 44.02	0.843
ZSDI	43.48 ± 9.29	44.35 ± 8.25	0.436

SAI: State Anxiety Inventory; TAI: Trait Anxiety Inventory; ZSDI: Zung Self-Rating Depression Index; HS: Hassles Scale.

and HAQ score) and psychological variables measured by SAI, TAI, HS, and ZSDI showed a significant correlation between HS scores and global severity, fatigue, pain, sleep disturbance, morning fatigue, and HAQ in both genders. SAI correlated with sleep disturbance and morning fatigue only among the women, and TAI with global severity and morning fatigue in both genders. ZSDI correlated with global severity, sleep disturbance, and HAQ in both genders. No significant correlation between psychological variables and age, duration of disease, and education was found in either sex. Consistent with our earlier report<sup>18</sup>, TP were independent of psychological factors. By Z transformation test, there were no significant differences in correlation values between male and female patients in any variable.

## DISCUSSION

We have reported significant differences between male and female patients with FM in several clinical variables, e.g., fatigue, morning fatigue, irritable bowel syndrome, and TP, in a rheumatology clinic setting<sup>11</sup>. Similar differences in clinical features were also found in a population study<sup>19</sup>. Our objective with this study was to examine possible differences between men and women with FM seen in the same clinic with regard to their psychological status.

Ours is the first focused and detailed study to evaluate the important and common psychological factors in men with FM and compare them with those in women with FM. Previous studies looking at difference in psychological factors among men and women with FM<sup>19,20</sup> did not measure stress, nor did they report correlations between important clinical and psychological variables. We measured stress by ordinal measurements and also by a validated questionnaire, i.e., HS. Stress has an important influence on FM. It has been found to be significantly more common in patients with FM than healthy controls as well as rheumatoid arthritis<sup>21–23</sup>. Stress is an important covariate for other psycho-

logical features in FM, e.g., anxiety, depression, social support, disease impact, hostility, and somatization<sup>23</sup>. In this study, stress was significantly correlated with important FM features, e.g., pain, fatigue, sleep difficulties, and HAQ, as well as global severity in both sexes. Moreover, it has been suggested that stress has a causative role in FM, as shown by a stress-related perturbed neuroendocrine system, e.g., the hypothalamic-pituitary-adrenal axis<sup>24</sup>, and the sympathetic nervous system<sup>25</sup>. Our correlational analyses showed meaningful relationships between psychological factors and several important clinical features.

We measured current anxiety, mental stress, and depression by using both ordinal scales and validated psychological instrument scores, and none of the measurements showed a significant difference between men and women. However, the scores are much higher than the normative values provided in each instrument. A previous study also showed that clinic patients with FM have significantly greater psychological distress compared with population controls<sup>26</sup>.

There is a limited number of reports evaluating gender difference in FM and related syndromes, e.g., chronic fatigue syndrome, irritable bowel syndrome, and headache<sup>27-31</sup>. These studies mostly evaluated clinical and not psychological features. In a population study, Wolfe, *et al* reported that men and women with FM did not show significant difference in their psychological status as measured by the Arthritis Impact Measurement Scale (AIMS) subscales of anxiety and depression, and by the Symptom Checklist 90-R (SCL-90-R)<sup>19</sup>. SCL-90-R is a multidimensional psychological instrument that measures symptoms in several domains including somatization, obsession/compulsion, anxiety, depression, interpersonal sensitivity, and hostility. Buskila, *et al* compared the psychological status of men versus women with FM using AIMS anxiety and depression subscales. Overall mental health was assessed by the Short-Form 36 (SF-36). There were no significant differences between men and women in any of these psychological measures<sup>20</sup>. In a study of irritable bowel syndrome, no significant differences were found in the psychological factors, e.g., anxiety and depression, in male and female patients<sup>30</sup>. There was no difference between men and women with chronic fatigue syndrome in health locus of control and coping<sup>27</sup>. Men who seek treatment for headache were equally likely to have symptoms of depression and anxiety as women who seek treatment<sup>31</sup>.

We found no significant differences in common, important psychological factors, e.g., anxiety, stress, and depression, between men and women with FM. Our results are consistent with other reports in FM and FM-related syndromes where such gender differences were studied.

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