



Psychiatric Disorders and Functional Disability in Patients with Fibromyalgia

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OBJECTIVE: *The objective of this study was to describe the prevalence of current psychiatric disorders and functional disability among a sample of patients attending a fibromyalgia group clinic in the Rheumatology Department at Kaiser Permanente Colorado.*

METHODS: *A sample of 184 patients, 92% of whom were women, were given questionnaires at the beginning of the group clinic. Questionnaires included items on demographics, work disability, and history of trauma and abuse. Also included were the following instruments: the Illness Intrusiveness Scale, the Fibromyalgia Impact Questionnaire, and the Quick Psychodiagnosics Panel.*

RESULTS: *Most patients reported a history of trauma (74.7%) or abuse (53.5%). Major depression (34.2%), anxiety (29.9%), and panic disorders (17.4%) were prevalent in this sample. Symptoms of bipolar disorder were present in 59.2% of patients. In addition, a high level of psychiatric comorbidity was evident: 64.1% of the patients met DSM-IV criteria for two or more diagnoses. These patients also reported clinically significant functional impairment (especially in the life domains of active recreation, health, and work) and were most negatively affected by fatigue, lack of restfulness at waking, and stiffness.*

CONCLUSIONS: *Baseline assessment of this patient sample confirmed clinicians' suspicion of clinically significant psychiatric and functional disability and led to the addition of a clinical psychologist to the group clinic to target and intervene with patients who had psychiatric disorders. We conclude that treatment effectiveness for fibromyalgia can be enhanced by collaboration between rheumatologists and behavioral medicine specialists.*

Introduction

Fibromyalgia—a condition characterized by chronic widespread pain with multiple tender points, fatigue, sleep disturbances, and clinically significant functional impairment—is often associated with psychiatric comorbidity.¹⁻³ The prevalence of fibromyalgia in the general population has been estimated to range from 2% among 20-year-old persons to 8% among 70-year-old persons, and the condition affects approximately 3.7 million Americans.⁴⁻⁶ The overwhelming majority of individuals suffering from fibromyalgia are women.

Although some treatments have been shown effective for fibromyalgia (eg, medications to improve sleep, exercise, some complementary therapies),⁷⁻¹⁶ no cure has yet been found. Patients with fibromyalgia pose a challenge to health care practitioners because the condition affects multiple aspects of physical as well as psychological function. For this reason, the traditionally brief medical office visit is often inadequate to address the needs of patients affected with

fibromyalgia. Moreover, the care provided to these patients is often fragmented: typically, they see a variety of different specialists (ie, rheumatologists, neurologists, orthopedic specialists, mental health providers) in addition to their primary care physician, often with no practitioner managing their overall care.

Most patients diagnosed with fibromyalgia by their primary care physician at Kaiser Permanente (KP) in Colorado are referred to a rheumatologist. Because of the volume of fibromyalgia patients seen there—fibromyalgia is the second most prevalent condition seen at the KP Colorado Rheumatology Department—and because of the difficulties in providing care to these patients within the traditional office-visit model, the rheumatologists developed a fibromyalgia group clinic that was implemented in 1998. The group clinic consists of one four-hour session that includes education about fibromyalgia and its diagnosis; behavioral guidelines for restorative sleep, relaxation, and exercise; and treatment such as medications and physical therapy. Because

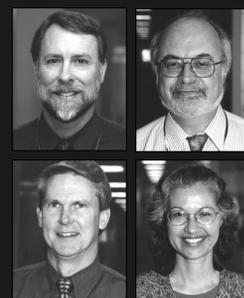
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<p>Kaiser Permanente <i>Fibromyalgia Assessment</i> Date: 04/04/00 PID: Gender: Female Age: 26 Session: Follow-up</p>	<p>Employment Status Have job outside home Y Presently working 'usual' job Y Presently unemployed N Declared medically disabled N Applying for medical disability N Fibromyalgia caused job change</p>	<p>APGAR Social Support: 7 (good) Y Exercise in past 6 months Y Suffered severe emotional trauma Y Has been abused</p>			
<p>Illness Intrusiveness How does illness interfere with your: 4 Health 5 Diet 5 Work 6 Active Recreation 2 Passive Recreation 2 Financial Situation 4 Relation w/spouse 5 Sex Life 3 Family relations 4 Other social functions 2 Self expression/improvement 1 Religious expression 1 Community/Civic improvement Scale: 1-Not very much to 7-Very Much</p>	<p>Fibromyalgia Impact 1 Physical Functioning Score 5 Days felt good last week 4 Nights restful sleep last week 0 Days missed work 3 How did pain interfere with job 1 How bad has pain been 7 How tired have you been 7 How you feel when you wake up 5 How bad is stiffness 2 How tense have you felt 2 How depressed have you felt Scale: 0-Best to 10-Worst</p>	<p>Stress Management Biggest Source of Stress ___ Marriage ___ Family <input checked="" type="checkbox"/> Work/School ___ Finances <input checked="" type="checkbox"/> Health <input checked="" type="checkbox"/> Other How do you handle stress: ___ Ignore it <input checked="" type="checkbox"/> Talk to spouse <input checked="" type="checkbox"/> Exercise <input checked="" type="checkbox"/> Relaxational exercises <input checked="" type="checkbox"/> Alcohol/drugs <input checked="" type="checkbox"/> Yoga ___ Prayer <input checked="" type="checkbox"/> Other</p>			
QPD Results					
TEST	RESULTS		REFERENCE RANGE		
	Within range	Out of range			
Depression		12	0-10		
Anxiety		15	0-10		
Panic Disorder	0		0-8		
OCD	4		0-5		
Bulimia	0		0-4		
Somatization		12	0-11		
<p>Notes:</p> <ul style="list-style-type: none"> - Rule out bipolar disorder before treating depression. - Depression Score is out of range, but patient does not appear to meet formal diagnostic criteria for major depression or dysthymia. - Anxiety Score is out of range, but patient does not appear to meet formal diagnostic criteria for generalized anxiety disorder. - Patient may be prone to somatization. <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Depressive Symptoms:</p> <ul style="list-style-type: none"> - depressed mood - weight gain - insomnia - agitation - fatigue, loss of energy - poor concentration - thinks about death </td> <td style="width: 50%; vertical-align: top;"> <p>Anxiety Symptoms:</p> <ul style="list-style-type: none"> - excessive anxiety or worry - worried about multiple things - restless, keyed up - easily fatigued - difficulty concentrating - muscle tension - sleep disturbance - easily startled - frequent cold, clammy hands or feet - frequent stomach aches - frequent hot flushes or chills - frequent heart racing or pounding - frequent "lump in throat" - frequently feels out of breath - frequent dizziness or lightheadedness - frequent sweating </td> </tr> </table>				<p>Depressive Symptoms:</p> <ul style="list-style-type: none"> - depressed mood - weight gain - insomnia - agitation - fatigue, loss of energy - poor concentration - thinks about death 	<p>Anxiety Symptoms:</p> <ul style="list-style-type: none"> - excessive anxiety or worry - worried about multiple things - restless, keyed up - easily fatigued - difficulty concentrating - muscle tension - sleep disturbance - easily startled - frequent cold, clammy hands or feet - frequent stomach aches - frequent hot flushes or chills - frequent heart racing or pounding - frequent "lump in throat" - frequently feels out of breath - frequent dizziness or lightheadedness - frequent sweating
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Figure 1: Rheumatologist-designed format for organizing results of fibromyalgia assessment.

the course of the condition is greatly affected by the presence of psychiatric disorders and by the patient's initial level of functional impairment, assessment of these two domains among patients attending the group clinic became a primary goal for the rheumatology providers.

To understand the prevalence of psychiatric disorders and functional impairment in patients with fibromyalgia and to develop treatment plans more closely tailored to individual patient clinical status, we administered a patient questionnaire at the beginning of the clinic. We were particularly interested in screening for psychiatric disorders, because the rheumatology clinical staff expressed their belief (and the medical literature about fibromyalgia suggests) that psychiatric disorders are common among patients with fibromyalgia and greatly affect these patients' ability to manage their condition and to achieve successful treatment outcomes.

Methods

Study Setting

The fibromyalgia group clinic is facilitated by a rheumatologist and by a nurse or nurse practitioner. The purpose of this clinic is to inform patients about the diagnosis and treatment of fibromyalgia, to suggest and develop self-management strategies, and to provide a forum for questions and answers. During part of the clinic, a physical therapist educates patients about exercise, and a psychologist provides information about stress management. The fibromyalgia group clinic was envisioned as a more efficient approach to educating and supporting patients while avoiding the unnecessarily duplicative care that results within the traditional office-visit model. Originally designed as three separate two-hour sessions over a period of three months, the clinic format was revised to consist of one four-hour session. This change was based on patients' preference to minimize the number of trips to the rheumatology clinic. Group size has ranged from 15 to 30 patients.

Study Subjects and Data Collection

The data for this study were obtained from a variety of validated self-report measures administered to 184 patients attending the fibromyalgia group clinic between November 1998 and August 1999. Patients had been referred to a rheumatologist by their primary care physician, who made the initial diagnosis of fibromyalgia; the rheumatologist scheduled the patient for the group clinic after confirming the diagnosis.

When patients arrived for the group clinic, they were given a questionnaire assessing demographics, job-related disability, history of trauma and abuse, fibromyalgia-related functional status, intrusiveness of the illness, and psychiatric disorders.

Questionnaires were contained in a Point-of-View Survey Systems (Denver, Colorado) "box"—a hand-held tablet about the size of a book, equipped with a liquid crystal display (LCD) screen displaying questions and a keypad with numeric and true/false buttons for entering responses. Questionnaires required a mean of 15 to 20 minutes to complete. After each questionnaire was completed, the Point-of-View box was placed on a docking station connected to a printer; questionnaire results were immediately summarized and printed in an easy-to-read format designed by the rheumatologists to highlight key findings and to allow rapid assessment of symptom severity and to assist with individualized treatment planning (Figure 1). The rheumatologists and nursing staff reviewed these results to develop care plans for patients and to assess any serious psychopathology that warranted referral to the mental health department. Data were stored in the Point-of-View boxes until they could be downloaded to a micro-computer for later analysis.

Measurement Instruments

Measurement instruments were selected by the rheumatologists after they reviewed the most widely used measures of condition-specific functional status as described in the rheumatology literature. The psychiatric assessment tool was chosen by the first author (AB) on the basis of his extensive experience with its use in primary as well as specialty care settings. The measures, self-administered by patients using the Point-of-View box, included the following:

- *Illness Intrusiveness Scale*.¹⁷ This scale measures the degree to which an illness interferes with major life domains, including diet, work, active and passive recreation, financial situation, relationship with significant other, sex life, family relations, other social relations, self-expression/self-improvement, religious expression, and community and civic involvement. Items are scored from 1 (not very much interference) to 7 (very much interference).

- *Fibromyalgia Impact Questionnaire*.¹⁸ This instrument was designed to measure the impact of fibromyalgia on instrumental activities of daily living (eg, shopping, meal preparation, household chores, walking several blocks, driving a car). This instrument



The Quick PsychoDiagnostics Panel screens patients for nine mental disorders according to DSM-IV diagnostic criteria.

also measures common symptoms associated with fibromyalgia, including nights of restless sleep, pain, fatigue (in general and at waking), depression, and anxiety.

• *Quick PsychoDiagnostics Panel.*¹⁹ This instrument is an automated tool for diagnosing and assessing the severity of psychiatric disorders. This part of the test required about 6.2 minutes to complete using the Point-of-View box. Diagnostic items are displayed on the screen in a true/false response format, and patients respond by pressing response buttons labeled "True" and "False." When a patient completes the test, the Point-of-View box is placed on a docking station connected to a printer, and a diagnostic report is printed automatically. The computer-generated report resembles a blood chemistry report (lower half, Figure 1). Patient data are also stored electronically in a database that can be accessed for subsequent analysis (eg, to create aggregate reports).

The Quick PsychoDiagnostics Panel screens patients for nine mental disorders according to DSM-IV diagnostic criteria: major depression, dysthymic disorder, bipolar disorder, generalized anxiety disorder, panic disorder, obsessive-compulsive disorder (OCD), bulimia nervosa, alcohol and/or other substance abuse, and somatization disorder. The "lab report" provides 1) numeric scores that indicate severity of symptoms, 2) a specific psychiatric diagnosis, and 3) a list of the symptoms that led to the diagnosis. The algorithm for ruling out bipolar disorder does not provide a DSM-IV diagnosis, because the diagnosis requires an interview by a trained clinician. The algorithm requires that patients report at least eight symptoms of

depression specified by the Quick Psychodiagnostics Panel and answer "True" to at least four of the following items, including the first item:

1. There have been periods in my life lasting a WEEK OR MORE when I was so excited or "hyper" that people thought I was not my normal self, or I got myself into real trouble.

During these periods when I was "hyper" or excited,

2. I needed far less sleep than usual.
3. I talked so much or so quickly that people had trouble stopping me or understanding me.
4. My thoughts were racing through my head, and I could not slow them down.
5. I was so distracted by everything that I could not keep myself on one track.
6. I did reckless things that I would not normally do (like having promiscuous sex or going on spending sprees).
7. I felt I could do anything or that I had special powers.

Some of these bipolar-type symptoms also appear to be common in fibromyalgia patients and may be associated with sleep disturbance. The test also identifies patients who may be at risk for suicide. The second page of the report lists the symptoms that led to the diagnosis. The validity of the Quick PsychoDiagnostics Panel has been described elsewhere.¹⁹

Additional questionnaire items asked about work-related disability, family support, participation in exercise programs during the past six months, history

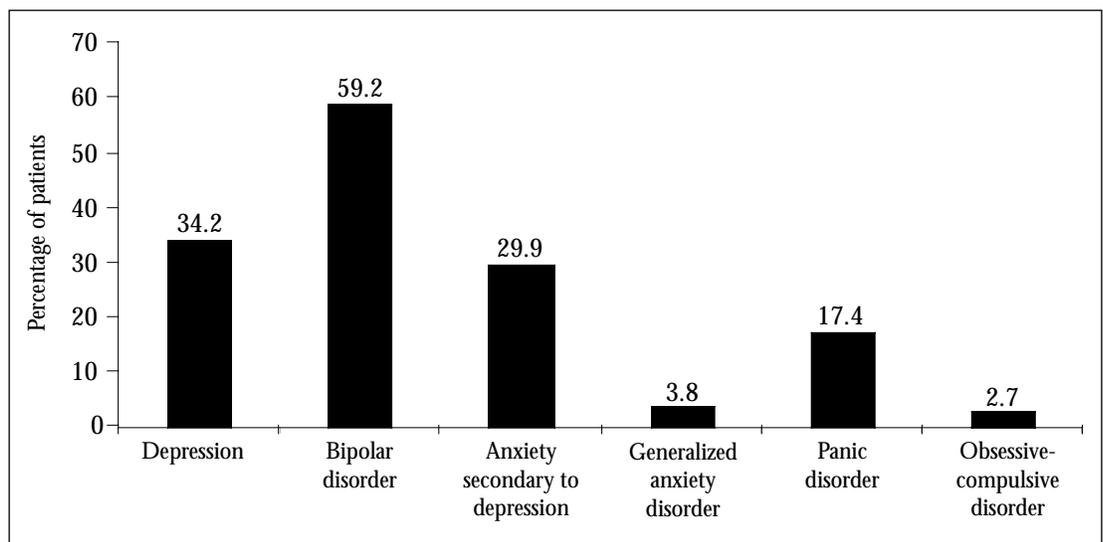


Figure 2: Diagnostic data for 184 patients attending



of trauma and abuse, sources of stress, stress management behaviors, and past and current medication use.

Results

Mean age of patients in the sample was 48.8 years (SD = 12.2), and 92% were female. More than one fifth (20.7%) of the patients reported that they currently were receiving medical disability benefits, and 11.4% indicated that they were applying for these benefits. More than one third (35.9%) of the patients indicated that fibromyalgia caused them to change jobs. Past trauma and abuse were prevalent: 74.7% responded affirmatively to the question, "Have you ever been in a severe accident, suffered the loss of a child, spouse, or suffered severe emotional trauma from some other life event?", and 53.5% responded affirmatively to the question, "Have you ever been abused (emotionally, physically, or sexually)?"

Psychiatric Diagnoses and Symptom Severity

Figure 2 shows the percentage of patients meeting DSM-IV criteria for diagnostic categories assessed by the Quick PsychoDiagnostics Panel. The most common diagnoses were major depressive episode (34.2%) and anxiety secondary to depression (29.9%). Panic disorder was also prevalent (17.4%). The Quick PsychoDiagnostics Panel generated a note suggesting to clinicians that they rule out bipolar disorder for 59.2% of the patients.

Figure 3 shows the percentage of patients who had multiple DSM-IV diagnoses. Most patients (61.4%)

had two or more diagnoses, suggesting a high level of psychiatric comorbidity.

In addition to diagnoses, results were obtained describing the mean symptom severity scores for several disorders (Figure 4). These scores reflect the actual number of symptoms reported by the patient for any given diagnostic category. Mean scores for depression (12.8) and anxiety (14.1) were within a clinically significant range. Similar to the finding of high levels of comorbidity among psychiatric diagnoses, Figure 5 shows a large percentage of patients (76.1%) with clinically significant psychiatric symptoms in two or more diagnostic categories. Therefore, even when they did not meet DSM-IV criteria for a diagnosis, most patients reported multiple clinically significant symptoms—most commonly, a combination of depression and anxiety.

Illness Intrusiveness and Fibromyalgia Impact

Figure 6 shows mean illness intrusiveness scores across the 13 different dimensions assessed. Ten of the 13 mean scores were higher than the midpoint score of 3.5, indicating that patients reported at least moderate interference of fibromyalgia with most domains of function. Areas of highest reported impact were active recreation (5.74), health (5.33), and work (5.21).

Results from the Fibromyalgia Impact Questionnaire (Figures 7 and 8) showed that patients had the highest mean levels of functional impairment in ability to do yard work (2.24), walk several blocks (1.77), and do vacuuming (1.69). More pronounced impairment

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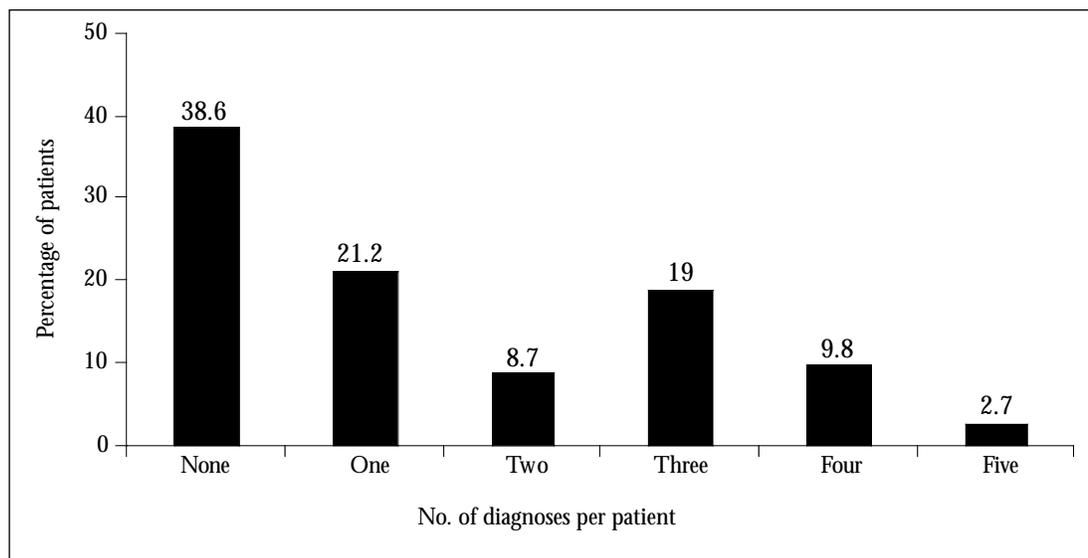


Figure 3: Multiple diagnoses (depression, dysthymia, generalized anxiety disorder, anxiety secondary to depression, panic disorder, obsessive-compulsive disorder, bipolar disorder) seen in 184 patients attending fibromyalgia group clinic.



The finding of self-reported bipolar-type symptoms in more than half of our patient sample was somewhat unexpected.

was evident for items associated with symptoms of fibromyalgia: on a scale of 1 (best) to 10 (worst), mean scores for these domains ranged from 5.68 (for interference of fibromyalgia with job) to 8.05 (for fatigue). Poor scores were reported also for feeling rested at waking (7.89) and stiffness (7.87). Moreover, patients reported that during the past week, on average, they felt good 2.08 days, had 1.84 nights of restful sleep, and missed 2.08 days of work.

Discussion

Baseline questionnaire results for our sample of fibromyalgia patients showed a high prevalence of past trauma and abuse, major depression and anxiety disorders, and clinically significant functional disability. Detailed histories of trauma and abuse were not obtained from patients; instead, single questionnaire items were used to ascertain this information. Therefore, caution must be used in interpreting these

results, which are nonetheless consistent with other reports describing a history of trauma and abuse among fibromyalgia patients.²⁰⁻²⁵

Our findings regarding psychiatric disorders are also generally consistent with other published research findings.^{1-3,21} In particular, depression among fibromyalgia patients might be expected, because considerable overlap exists between fibromyalgia symptoms and symptoms of depression (eg, fatigue and sleep disturbance). Of particular note was the high level of psychiatric comorbidity—the most common being a combination of mood and anxiety disorders. Because the Quick PsychoDiagnostics Panel assessed multiple psychiatric disorders, we were able to gain a more comprehensive picture of the range and severity of psychiatric impairment in our patient sample.

The finding of self-reported bipolar-type symptoms in more than half of our patient sample was somewhat unexpected. As discussed earlier, substantial overlap may exist between symptoms of sleep disturbance associated with fibromyalgia and bipolar symptoms. However, the rheumatologists expressed their clinical impression that bipolar disorder is fairly common among fibromyalgia patients and complicates treatment—and that, therefore, the bipolar-type symptoms reported in responses to the Quick PsychoDiagnostics Panel may identify some patients who truly have bipolar disorder. Nonetheless, the definitive diagnosis of this disorder can be made only after a more in-depth interview by a trained mental health clinician.

The patients in our study sample had clinically significant levels of functional disability that appeared to be widespread across most life domains and that most severely affected performance of physical activities such as doing yard work and walking several blocks. Notably, work-related function was substantially impaired. About one third of the sample were either receiving or applying for disability benefits, and, on average, patients had been absent from work more than two days during the prior week. The most commonly reported symptoms associated with this disability included fatigue, lack of restful sleep, and stiffness.

Clinical Implications of Findings

Our findings of substantial current psychiatric disorders as well as a history of trauma and abuse among fibromyalgia patients underscored these patients' need for behavioral health services. As a result, the rheumatology and behavioral health departments formed a stronger collaboration to make behavioral health services more readily accessible to fibromyalgia pa-

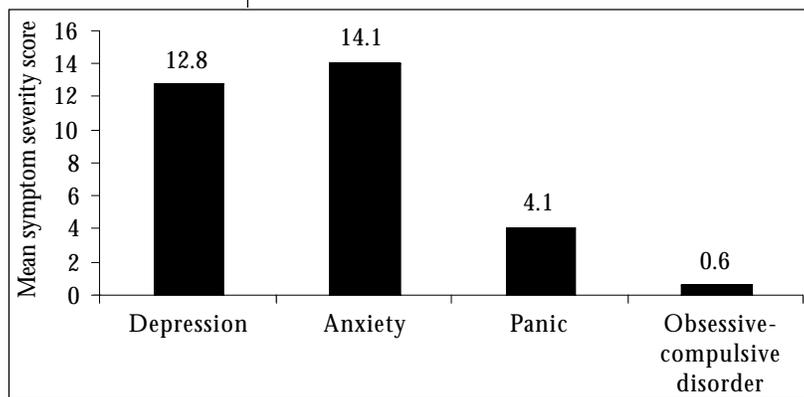


Figure 4: Symptom severity scores for 184 patients attending fibromyalgia group clinic.

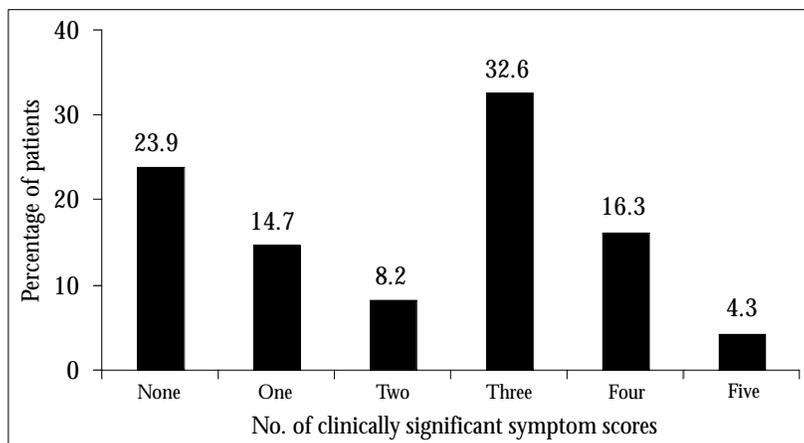


Figure 5: Number of clinically significant symptom severity scores (depression, anxiety, panic disorder, obsessive-compulsive disorder, somatization) for 184 patients attending fibromyalgia group clinic.

This study suggests the importance of a multidisciplinary team approach to treating fibromyalgia.

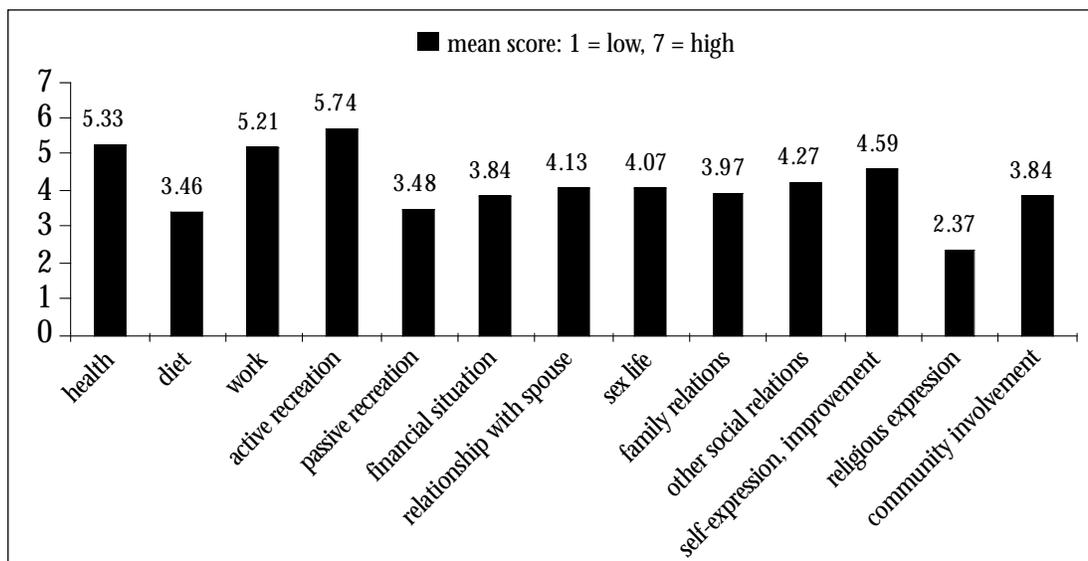


Figure 6: Illness intrusiveness scores for 184 patients attending fibromyalgia group clinic.

tients. A psychologist is now present at the group clinics to discuss stress and stress reduction with the patients. The psychologist also reviews printouts of Quick PsychoDiagnostics Panel results, identifies patients with high-risk profiles, conducts more detailed assessment with these patients (eg, obtains more thorough information about trauma and abuse history, possibly diagnoses posttraumatic stress disorder, confirms a diagnosis of bipolar disorder) and plans more intensive, individualized intervention (eg, cognitive behavioral therapy, referral to a psychiatrist for medication evaluation).

The results from this study suggest the importance of a multidisciplinary team approach to treating fibromyalgia. This approach is supported by other published research.^{7,8,26,27}

As an important next step, follow-up surveys should be conducted to assess changes in fibromyalgia patients' psychiatric symptoms and functional status six months to one year after they attend the group clinic. The goal of this follow-up would be to identify factors that improve the health of fibromyalgia patients or that inhibit this improvement. Such findings will enable us to modify the group clinic to better meet the needs of fibromyalgia patients and to increase the likelihood of improved outcomes in this patient population. ❖

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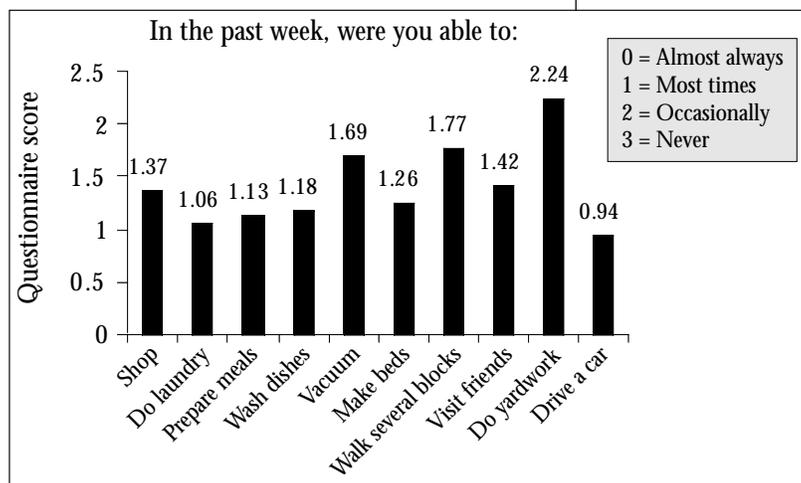


Figure 7: Response scores for 184 patients answering Fibromyalgia Impact Questionnaire.

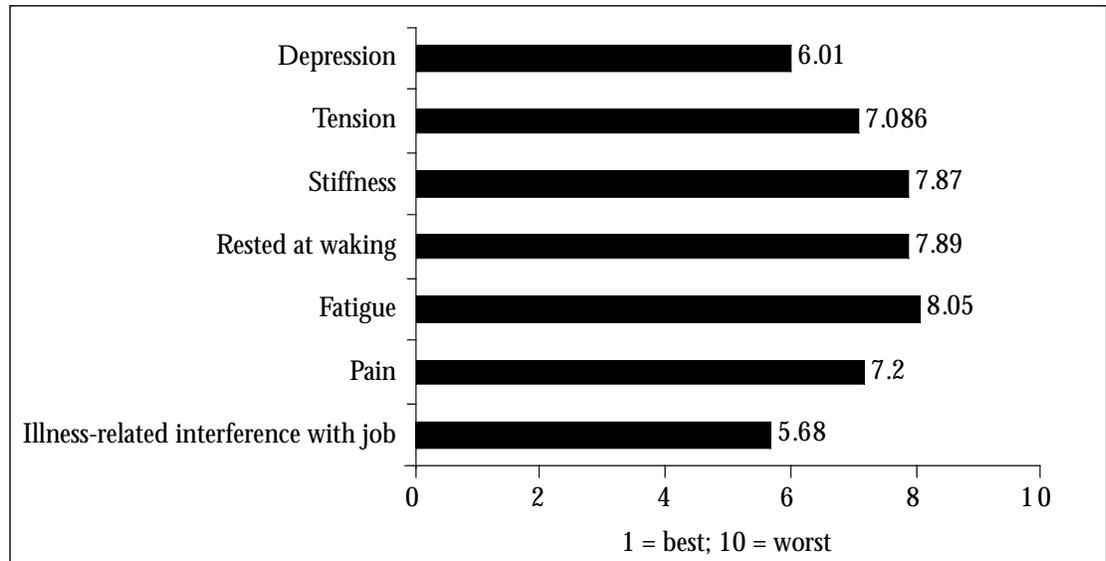


Figure 8: Distribution of symptoms reported by 184 patients answering Fibromyalgia Impact Questionnaire.

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