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**Pain, Disability, and Psychological Functioning in Chronic Low Back Pain Subgroups: Myofascial versus Herniated Disc Syndrome**

Cassisi, Jeffrey E. Ph.D.; Sybert, George W. M.D.; Laganá, Luciana Ph.D.; Friedman, Elizabeth M. B.A.; Robinson, Michael E. Ph.D.

**Author Information**

Department of Psychology, Illinois Institute of Technology, Chicago, Illinois (JEC, LL, EMF); Southwest Florida Neurosurgical Associates, Ft. Myers, Florida (GWS); Department of Clinical and Health Psychology, University of Florida, Gainesville, Florida (MER)

**Reprint requests:** Dr. Jeffrey E. Cassisi, Department of Psychology, Illinois Institute of Technology, IIT Center, Chicago, IL 60616.

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**ABSTRACT**

A SERIES OF patients with chronic low back pain evaluated at a tertiary referral center were the subjects for this study. Of 250 consecutive patients, 94 were diagnosed as having myofascial pain and 57 as having herniated disc syndrome. Before evaluation and diagnosis, all patients completed the McGill Pain Questionnaire, ratings of pain and disability, and the Symptom Checklist 90-R. Patients were also grouped on the basis of previous surgical history and workers' compensation benefits. Patients suffering from myofascial pain were significantly less likely to report periods of pain relief than patients with herniated disc syndrome. Those receiving workers' compensation benefits reported significantly greater levels of pain, disability, and psychological distress than those not receiving benefits, irrespective of diagnosis. Patients who underwent previous surgery did not differ significantly from those who never underwent surgery. All patients had elevated scores on the Somatization subscale of the Symptom Checklist 90-R. Patients with myofascial pain and workers' compensation benefits demonstrated the highest levels of somatization and phobia. These findings suggest that the effects of low back pain of myofascial origin have comparable, if not worse, consequences than disc herniation. These findings also reaffirm the importance of workers' compensation in understanding the differences in patients with chronic low back pain.

Chronic low back pain (CLBP) by all accounts is a significant health problem for our society (8). Most research in the area has used heterogenous groups of CLBP patients (1,3,9,14,22). For example, patients suffering from inflammatory processes have been combined with those suffering from lumbar stenosis and psychophysiological pain disorders to form the ubiquitous "CLBP group." Several studies have argued that if progress is to be made in the area, researchers should focus on carefully defined homogenous clinical subgroups (10,27,28). Part of the problem is that subgroups of CLBP patients can be defined on the basis of many variables, such as demographics, imaging results, origin, and response to treatment. Two distinct subgroups of CLBP patients that often seek treatment from specialists are those with myofascial pain and those with herniated disc syndrome. These patients differ significantly in neurological examination, imaging results, and treatment alternatives (27,28). No previous study has compared pain, disability, and psychological functioning in these specific patient subgroups.

The purpose of this study was to explore the differences between two carefully diagnosed subgroups of CLBP patients, those with myofascial pain syndrome and those with herniated disc syndrome. This is a controversial undertaking because of the differing and competing theories about the origin of low back and leg pain. Specific selection criteria are described in the Methods section below. These criteria were developed from our work (27,28) and the work of others in this area (23,29). It is generally agreed that a physical examination is the primary diagnostic procedure in this area and that imaging should be used as a confirmatory tool when possible (24).

**DIAGNOSING MYOFASCIAL PAIN**

Myofascial pain is of muscular origin. The causes of myofascial pain are thought to be related to trauma at the intracellular level, but they are complex and poorly understood (6,20). Myofascial pain can begin suddenly and result from acute injury. However, it may also develop gradually with repetitive muscle strain. The primary complaint of myofascial pain patients is localized low back pain, sometimes with diffuse, nonspecific hip and proximal leg radiation. The symptoms are usually worsened by activity and improved by rest. Physical activities, particularly bending, twisting, and lifting, commonly exacerbate the symptoms; whereas restriction of pain-producing activities results in improvement on a temporary basis. Typical physical findings are nonspecific, including paravertebral muscle spasms, limited range of motion of the spine, scoliosis, and muscular trigger points. These symptoms are aggravated by the straight leg raising test, but do not produce true radicular pain or true

These symptoms are aggravated by the straight leg raising test, but do not produce the radicular pain of true sciatica. In other words, the straight leg raising test is negative from the standpoint of radiculopathy, even though it may exacerbate lumbar or hip soreness. Objective reflex and motor and sensory alterations are not present.

No distinction is made here between fibromyalgia and myofascial pain other than the degree of involvement. That is, the convention is to refer to a patient's individual site of muscular pain as a myofascial pain and to refer to a patient with multiple regions of muscular pain (i.e., a patient with cervical, scapular, and lumbar pain) as suffering from a fibromyalgia syndrome (17,26).

Patients suffering from myofascial pain generally respond well to conservative treatment with a regimen of stretching and exercise. In severe cases, patients do well with an inpatient rehabilitation program (4). They do not respond to surgical intervention.

## DIAGNOSING DISC HERNIATION

In contrast, lumbar disc herniation has symptoms and signs suggestive of nerve root compression. The patient typically complains of severe radicular leg pain that radiates along the course of the sciatic nerve. Complaints of back pain are secondary. Nerve root involvement is defined by the pattern of pain and paresthesia radiation. In some cases, the patient may report little pain, but exhibit prominent neurological deficits, such as foot-drop or cauda equina syndrome, which, for example, would be the consequence of a massive disc herniation at L4-L5. The vast majority of patients with herniated disc have as their principal complaint radicular pain. These patients have a positive straight leg raising test with a positive sciatic nerve stretch test that produces radicular pain along the distribution of the sciatic nerve below the knee, usually into the calf, and often the ankle. The pain is usually

referable to a specific nerve root. Associated with this are generally positive neurological findings that are classic for the individual nerve root (32).

## MODERATING VARIABLES

For both types of patients, levels of pain, disability, and psychological functioning may be complicated by other kinds of events. Previous surgical interventions and workers' compensation have been repeatedly implicated as exacerbating factors.

Patients who have undergone previous surgical interventions also appear to show increased disability and psychological distress in some studies. Long et al. (15) suggest patients with intractable pain often receive unnecessary surgery. That is, these patients do not always meet the generally accepted neurosurgical criteria for spinal surgery. A series of 78 patients were reviewed. Of these, 11.6% developed serious physical complications from surgery. Furthermore, of all the operations performed, 56% were necessary to correct a complication from a previous surgery. Therefore, surgery often leads to complications that then make subsequent surgeries necessary. Psychological functioning was also compromised in these patients. Eighty-five percent suffered from reactive depression and anxiety. Primary psychiatric diagnoses were given to 56% of the subjects.

Gallon (9) reported that a significantly higher proportion of CLBP patients who had surgery described themselves as worse on a measure of disability, compared with a no-treatment CLBP group (58% versus 30%). In addition, only 17% of the surgical patients saw themselves as improved, compared with 38% of the no-treatment group. Rosen et al. (22) found that patients with previous operations described significantly more disability. These patients reported that most of their activities were hampered by pain. The degree of work disability was highest among patients with previous operations.

Rosen et al. (22) also reported that patients with previous operations demonstrated an elevated neurotic triad on the Minnesota multiphasic personality inventory test. This subgroup was characterized by moderate to severe depression and other mood disturbances, such as anger and anxiety, and they were described as untrusting and socially alienated.

Research has shown that levels of pain and physical symptoms are greater in patients receiving workers' compensation benefits (14,31). One study examined the difference between time-limited and unlimited compensation on pain behavior (12). They discovered that patients receiving benefits on an unlimited basis had a higher percentage of pain behavior and used more medication than noncompensation or time-limited compensation patients. On the other hand, some have argued that workers' compensation benefits are not associated with greater pain symptomatology. For example, Mendelson (19) found no support for existing differences in pain severity ratings between patients with and without compensation benefits. This study could be criticized however, because there was an extreme difference in the duration of pain between the two groups. Patients receiving compensation experienced CLBP for an average of 34 months, whereas those not

receiving compensation suffered for an average of 114 months. Thus, patients receiving compensation were being compared with particularly intractable and severe back pain patients.

Receiving workers' compensation benefits also appears to affect one's perceived level of disability. A long-term follow-up study of 300 chronic back pain patients revealed that compensation factors were strong predictors of long-term disability (9). Patients receiving compensation reported their level of disability as worse, compared with patients with settled claims. Other studies have demonstrated similar trends, finding that compensation patients were less likely to report a return to full activity (3,22). Not all studies support the poor prognosis of patients receiving workers' compensation benefits. For example, Barnes et al. (1) found that higher compensation payments were associated with a greater earning potential and thus, a greater likelihood for returning to work.

Patients receiving compensation benefits are also more likely to demonstrate severe psychopathology based on a *Diagnostic and Statistical Manual of Mental Disorders-3rd edition* diagnosis (7) and to display an elevated neurotic triad when tested with the Minnesota Multiphasic Personality Inventory test than are noncompensation patients (22). This suggests a general tendency for compensation patients to experience increased psychological distress, compared with patients not receiving compensation benefits.

The purpose of the following study was to explore the differences between two homogeneous subgroups of CLBP patients, those with myofascial pain syndrome and those with herniated disc syndrome. To meet this goal, patients with mixed or combined diagnoses of myofascial pain and herniated disc were excluded. Because myofascial pain is considered benign and herniated disc disorders cause disabling neurological injuries, it was hypothesized that patients with the latter will experience higher levels of pain, disability, and psychological distress, compared with the group with myofascial pain. Based on the previous research mentioned, it was expected that patients who are receiving workers' compensation benefits and patients with a history of previous surgery also will demonstrate higher levels of pain, greater disability, and psychological distress.

## METHODS

### Subject selection

The issue of assignment of patients to the two groups was a complex one. To contrast the two conditions as clearly as possible, it was thought that homogenous groups of patients should be studied. Therefore, patients who met individual criteria for both myofascial pain and herniated disc were categorized as combined and excluded from this study.

Specific inclusion criteria for the myofascial pain diagnosis were all of the following: paravertebral muscle spasms, limited range of motion of the spine, lumbar site tenderness, and nonspecific aggravation of symptoms on the straight leg raising test. Specific exclusion criteria included the following: objective reflex, motor and sensory alterations, and positive imaging results (27,28).

Specific inclusion criteria for the herniated disc diagnosis were positive imaging results at the lumbar or sacral level and at least one of the following: radicular leg pain along the course of the sciatic nerve, positive crossed straight-leg raising test, diminished tendon reflex, specific paresis, and dermatomal sensory loss. Specific exclusion criteria included significant symptoms of myofascial pain.

Exclusion criteria for both groups included symptoms of other conditions that lead to CLBP, such as neoplastic, mechanical, toxic-metabolic, inflammatory-infectious, vascular, and psychophysiological conditions (27,28).

Subjects for this study were referred to the University of Florida Outpatient Neurosurgery Clinic, a tertiary referral center, for assessment, diagnosis, and recommendations for treatment. During a 2-year period, 151 of 250 consecutive patients met the specific criteria for myofascial pain (n = 94) or herniated disc syndrome (n = 57). The remaining 99 of the 250 patients met the specific exclusionary criteria and were not included in the analyses. Of these 99, 37 were given a combined diagnosis and 62 suffered from other conditions described above.

### Demographic profile of sample

The average age of the patients was 43 years, and the average number of years of education was 13. Seventy-five percent were married, and 32% were employed at the time of assessment.

Tables 1 and 2 list demographic variables by diagnostic group. No differences were found on variables of gender, workers' compensation, surgical history, employment, marital status, age, or education, when examined by diagnostic group by  $[\text{chi}]^2$  test.

	Group 1 Myofascial Pain (n = 94)	Group 2 Herniated Disc (n = 57)
<b>Gender</b>		
Male	54%	47%
Female	46%	53%
<b>Workers' compensation</b>		
Yes	35%	25%
No	65%	75%
<b>Surgery</b>		
Yes	24%	34%
No	76%	66%
<b>Employment</b>		
Yes	31%	34%
No	69%	66%
<b>Marital status</b>		
Yes	79%	69%
No	21%	31%

**\* Group 1, myofascial pain; Group 2, herniated disc. No significant differences were obtained.**

Table 1. Categorical Demographic Variables by Diagnostic Group<sup>a</sup>

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	Group 1 Myofascial Pain	Group 2 Herniated Disc	F Value
Age	41.6	44.2	1.8888
Education	12.5	13.4	3.4957
Duration (mo)	27.4	12.1	16.7149*

**\* Group 1, myofascial pain; group 2, herniated disc. \* Significant at  $P < 0.001$ .**

Table 2. Continuous Demographic Variables by Diagnostic Group<sup>a</sup>

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A significant difference was discovered in the duration of pain. Patients suffered from myofascial pain an average of 27 months, whereas they suffered from herniated disc pain an average of 12 months before referral. As discussed above, this could have a confounding effect on the results, therefore duration was included as a covariate in all subsequent analyses.

#### Measures

All patients in this clinic referred for back pain completed the measures described below, before evaluation and diagnosis by a neurosurgical specialist (G.W.S.).

#### Pain assessment

A global measure of pain was obtained by using the McGill Pain Questionnaire (18). The number of pain adjectives endorsed provided a measure of the total pain. In addition, patients were asked to rate their pain on two Likert-type rating scales (11). Specifically, they were asked to rate their pain at its worst and pain at its least. These scales ranged from 1, no pain, to 6, excruciating pain.

#### Disability assessment

Disability was assessed by asking subjects to rate their current ability to function with 12 common daily activities, such as climbing stairs or driving a car. Patients endorsed whether they were unable to perform that activity because of pain. The number of items endorsed was the disability total. Scores ranged from 0 to 12. Independent pilot work in this clinic with 25 CLBP patients with mixed diagnoses found that the disability total has a 0.62 correlation ( $P = 0.01$ ) with the disability index from the Stanford Health Assessment Questionnaire (33), a widely accepted measure of adaptive functioning in patients with chronic illness.

#### Psychological assessment

Psychological functioning was measured by the Symptom Checklist 90-R (SCL-90-R) (5). The SCL-90-R is a 90-item questionnaire that measures somatic, personal, and interpersonal events that have caused recent distress. The subject indicates the severity of distress on a five-point scale. The use of the SCL-90 in studies involving chronic pain patients is well documented (13,14,16,25). There are nine subscales, however, the Global Severity Index is considered the best indicator of overall psychological distress (5).

#### RESULTS

There were 14 dependent variables in this study. A multivariate analysis of covariance was performed by diagnostic group with workers' compensation and surgical history included as nested factors and duration as the covariate. Table 3 displays the means and standard deviations by diagnostic group and workers' compensation on the dependent variables.

Measure	Group 1 (SD) Myofascial Pain	Group 2 (SD) Herniated Disc	Mean (SD)
Total pain <sup>a</sup>			
WC	18 (12)	20 (9)	19 (11)
No WC	17 (10)	14 (9)	16 (10)
Mean	17 (11)	15 (9)	
Pain at its worst <sup>b</sup>			
WC	4.6 (1)	4.7 (1)	4.6 (1)

No WC	4.3 (1)	4.3 (1)	4.3 (1)
Mean	4.4 (1)	4.4 (1)	
Pain at its least <sup>b</sup>			
WC	1.9 (1)	1.6 (1)	1.8 (1)
No WC	1.8 (1)	1.1 (1)	1.5 (1)
Mean	1.9 (1)	1.2 (1)	
Disability total <sup>c</sup>			
WC	9 (2)	9 (2)	9 (2)
No WC	7 (2)	7 (3)	7 (3)
Mean	8 (2)	7 (3)	
Global Severity Index <sup>d</sup>			
WC	63 (14)	61 (10)	62 (13)
No WC	57 (12)	56 (13)	57 (13)
Mean	59 (13)	57 (13)	

<sup>a</sup> Total Pain from the McGill Pain Questionnaire, number of endorsed pain descriptors, range from 0 to 88. WC, Worker's Compensation. See text for significance levels.

<sup>b</sup> Likert Rating, range from 1 (no pain) to 6 (excruciating).

<sup>c</sup> Number of disabilities endorsed, range from 0 to 12.

<sup>d</sup> Global Severity Index from SCL-90, a measure of psychological distress, range of T-scores from 24 to 71 for females and from 30 to 69 for males, mean of 50 and SD of 10 for nonpatient norms.

Table 3. Means and Standard Deviations of Dependent Measures by Diagnostic Group and Workers' Compensation Status

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Results from the multivariate analysis of covariance yielded significant differences between diagnostic groups with Hotelling's  $T^2$  statistic<sup>14,129</sup> = 0.18859,  $P = 0.05$ . Subsequent univariate analysis of variance yielded a significant difference between groups on pain at its least,  $F^{1,142} = 9.96$ ,  $P = 0.002$ . These results suggest that patients suffering from herniated disc disorders were more likely to report periods of reduced pain than patients with myofascial pain disorders.

Significant differences between patients who received workers' compensation and those who did not were found with Hotelling's  $T^2$  statistic<sup>14,129</sup> = 0.30804,  $P < 0.001$ . Subsequent univariate analyses of variance resulted in significant differences on five variables: total pain,  $F^{1,142} = 4.2$ ,  $P = 0.04$ ; pain at its worst,  $F^{1,142} = 5.95$ ,  $P = 0.01$ ; disability total,  $F^{1,142} = 11.88$ ,  $P = 0.001$ ; global severity index,  $F^{1,142} = 4.26$ ,  $P = 0.04$ ; phobia,  $F^{1,142} = 7.26$ ,  $P = 0.002$ ; and paranoia,  $F^{1,142} = 3.8$ ,  $P = 0.05$ . Those statistics indicate that patients receiving workers' compensation benefits reported greater levels of pain, disability, and general psychological distress than those who did not receive benefits. Patients receiving workers' compensation were more phobic and more suspicious than those who did not receive benefits.

Previous surgery was not found to be a significant factor when comparing the two groups. No significant interactions were obtained with any variable. A significant effect for the covariate was obtained only for the Interpersonal Sensitivity subscale from the SCL-90-R,  $t = 1.94$ ,  $P = 0.05$ .

Figure 1 presents the SCL-90-R subscale scores by diagnostic group. Figure 2 presents the SCL-90-R scores by workers' compensation benefits.

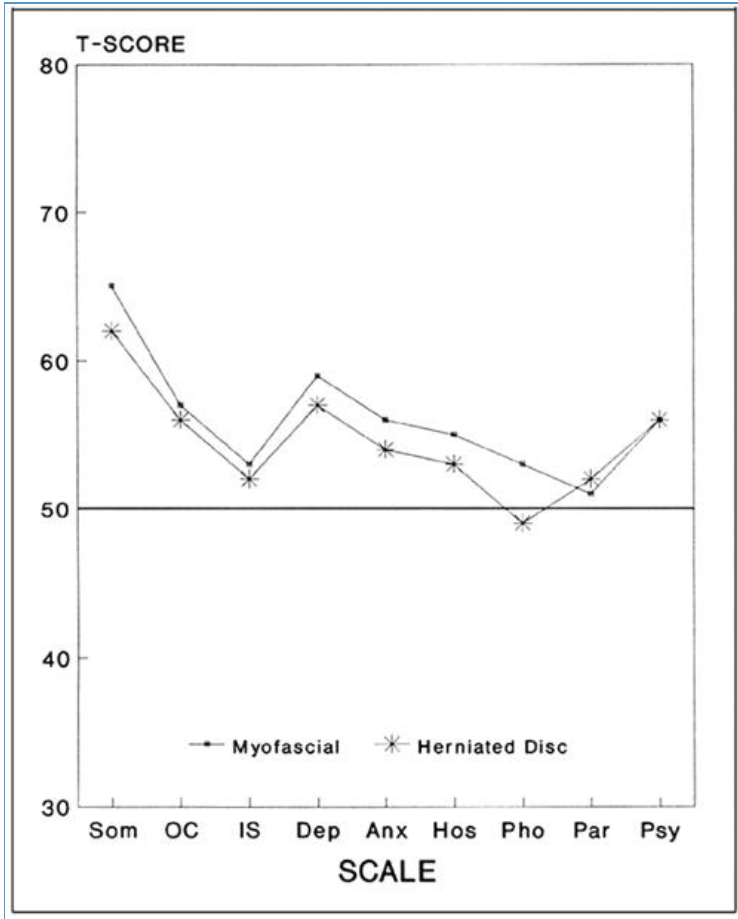
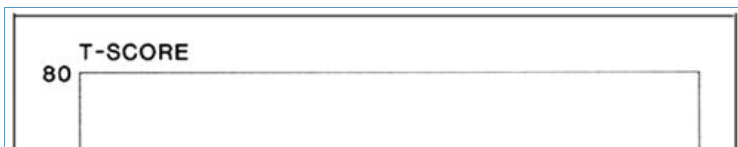


Figure 1. SCL-90-R profiles by diagnosis. SCL-90-R subscales: *Som*, somatization; *OC*, obsessive compulsive; *IS*, interpersonal sensitivity; *Dep*, depression; *Anx*, anxiety; *Hos*, hostility; *Pho*, phobia; *Par*, paranoia; *Psy*, psychotic.



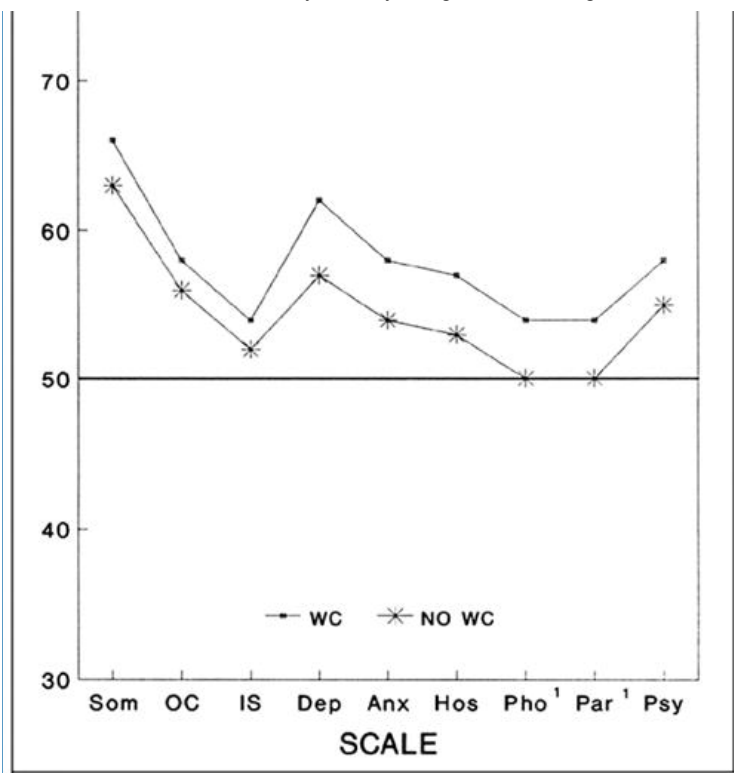


Figure 2. SCL-90-R profiles by workers' compensation (WC) status. SCL-90-R subscales: *Som*, somatization; *OC*, obsessive compulsive; *IS*, interpersonal sensitivity; *Dep*, depression; *Anx*, anxiety; *Hos*, hostility; *Pho*, phobia; *Par*, paranoia; *Psy*, psychotic. <sup>1</sup>, myofascial-WC is significantly greater than herniated disc-no WC.

## DISCUSSION

Both diagnostic groups reported high levels of pain. Myofascial pain patients, however, were less likely to report periods of reduced pain than the herniated disc group. This is clinically significant because of the grossly different etiologies and treatment consequences for each subgroup. Myofascial pain is not a benign disorder. In fact, it may cause a more unrelenting course of pain than herniated disc disorders.

Of course, this conclusion takes patient pain reports at their face value and equates pain experienced in the lumbar region with pain radiating down the leg. An alternate hypothesis is that without positive imaging test results, myofascial pain patients need to stress their pain and disability symptoms to communicate the gravity of their experience. This issue could be studied at primary care centers by having patients give pain ratings before and after initial feedback from their physician about their objective test results.

This study replicates and extends previous conclusions that patients who receive workers' compensation benefits report more total pain, more severe disability, and psychological distress than those patients who don't receive benefits (7,9,31). It is tempting to infer that workers' compensation benefits cause this relationship, which is often implied in the literature. The logic is that workers' compensation benefits provide disincentives for rehabilitation and delay recovery. Symptoms become exacerbated by inactivity. Ultimately, this process decreases the patient's independence, self-efficacy, and sense of self-worth (21). There are alternate hypotheses, however. It is also possible that recipients of workers' compensation have had worse injuries in the first place. This increases both their chances of receiving compensation and the severity of sequelae to their injury. Only additional large-scale prospective research can answer these questions.

All patients had normatively elevated levels of somatization. This has been reported in the literature many times across different psychological tests (21). Some have argued that the Somatization scale measures a tendency to express psychological conflict through physical symptoms. Analysis of the specific items from this scale reveal descriptive questions that any patient with back pain would endorse as well as items only tangentially related to back pain. Post-hoc analysis revealed significant elevations in somatization for myofascial pain patients receiving workers' compensation benefits, relative to herniated disc patients not receiving compensation. All patients receiving workers' compensation scored significantly higher on the Phobia and Paranoia subscales.

In addition to diagnostic group and compensation factors, the surgical histories of the patients were examined. Previous studies have found higher percentages of psychological dysfunction among patients who underwent multiple operations and have suggested reasons to suspect an existence of preoperative emotional problems (2,15). This study found no support for the notion that previous surgery is associated with increased



pain, disability, or psychological distress.

Although some of our expectations were met, the exploratory nature of this study suggests that the conclusions be approached with caution. In future research, the reliability of the diagnosis of myofascial pain and herniated disc should be addressed more explicitly. This would require that patients be diagnosed by a panel of expert neurosurgical specialists and that levels of interrater agreement established. This is an expensive proposition and was beyond the scope of this study.

Other drawbacks should be noted. The duration of the pain was significantly different for each diagnostic group. (It was not near the 80-month difference between groups reported in the Mendelson (19) study.) The authors attempted to lessen the impact of this by using the duration factor as a covariate, but some influence may still be present in unforeseen ways.

Future research on the topic should collect more sophisticated measures of pain, such as pain diaries, from patients (30). This will allow more explicit analysis of the frequency of pain and the duration of pain episodes.

Finally, subjects were obtained from a tertiary referral center, therefore, these results may not generalize to primary care situations or to other locations. This is a question that only multicenter research can answer.

To summarize, this article has addressed what remains a controversial and important topic in the area. That is, chronic low back pain patients should not be considered one homogenous group in research, but rather they should be classified further, according to both physical and psychosocial criteria. The present study also reaffirmed the importance of workers' compensation as a moderating variable for pain, disability, and distress when considering specific subgroups of chronic low back pain patients.

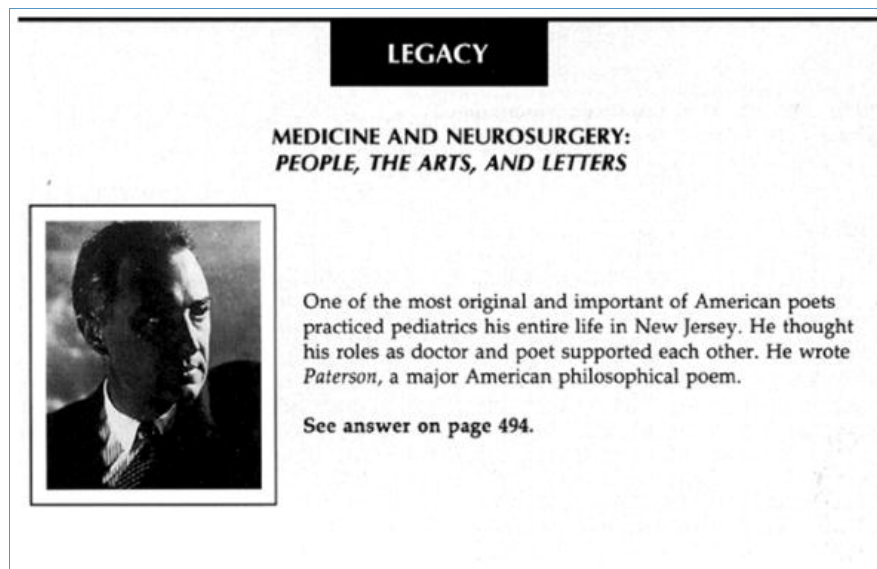


Figure 3. No Caption Available.

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## COMMENTS

This article addresses a problem common to most neurosurgical practices. That is, the treatment of low back pain, myofascial pain, and "herniated discs." Of 250 patients referred to the University of Florida Outpatient Neurosurgery Clinic, 94 were diagnosed as having myofascial pain and 57 were diagnosed as having herniated disc syndrome. These patients were carefully studied with several psychological testing instruments, including a pain questionnaire, a pain rating and disability score, and a symptom checklist. The authors found that patients suffering from myofascial pain were less likely to report a period of pain relief than patients with herniated disc. In agreement with other studies, this study found that patients receiving workers' compensation benefits reported, in general, greater levels of pain, disability, and psychological stress than those not receiving benefits. Interestingly, previous surgery did not have a significant effect on the test results used in this investigation. Not surprisingly, all patients had elevated scores on a somatization determinant. Furthermore, patients with myofascial pain and workers' compensation benefits demonstrated the highest levels of both somatization and phobic tendencies.

This study again points out the tremendous importance of psychological indicators and disability in the evaluation of patients with low back pain and herniated discs. As the authors suggest, the finding does indicate that the effects of low back pain of myofascial origin have comparable, if not greater, impact on disability than does the diagnosis of "disc herniation." The authors correctly point out that "only further large scale

prospective research” can begin to address the problems of low back pain and outcome from surgical and nonsurgical treatment of low back, spinal, and myofascial disorders.

The treatment of low back pain and spinal disorders is an important aspect of most neurosurgical practices. Those of us in the neurosurgical community must both support and be attentive to the results of studies such as this. Although it is comforting to think of this group of patients as falling into distinct subcategories, the clinical reality is more often that the issues of the psychological background of the patient, secondary gain, disability, and compensation are practically universal and must be considered in every case. The authors have helped reemphasize these points and have broadened the foundation for continued neurosurgical leadership in the area of spinal disorders.

**Kim Burchiel**

*Portland, Oregon*

#### COMMENTS

This article makes some good points concerning the psychological problems associated with workers' compensation and myofascial back pain. The frequent reference to many of the articles concerning chronic pain and workers' compensation was quite valuable. The article points out that myofascial pain is frequently a very difficult problem to treat and does not necessarily suggest a better prognosis than a surgical lesion. The authors' observation concerning the difference in the duration of pain in the two patient populations makes it difficult to compare the two groups.

**Michael J. Ebersold**

*Rochester, Minnesota*

#### COMMENTS

This article addresses an extremely important subject. As neurosurgeons, we deal with large numbers of patients complaining of low back pain and leg pain, presumably related to lumbar spine disease. Frequently, the impact of disability, workers' compensation, and psychological factors to low-back and leg-pain complaints is not sufficiently considered by neurosurgeons when deciding whether to recommend a surgical course. The authors attempt to distinguish two subgroups of patients: those with so-called myofascial pain and those with herniated disc syndromes. How specifically distinct these subgroups are remains open to question. In my own experience, there is often considerable overlap. In addition, the whole question of myofascial pain, originally popularized by Travell, is open to question. The diagnostic significance of so-called trigger points and taut bands, for instance, has been questioned frequently in the medical literature. From the neurosurgeon's standpoint, however, this article can be looked at usefully by considering those patients assigned to the myofascial pain group as being essentially equivalent to patients for whom surgical treatment is clearly not indicated. The herniated-disc-syndrome patients would be those in which surgical treatment might be seriously considered, and in those patients, the importance of workers' compensation and psychological issues is highlighted by this article.

As a neurosurgeon specializing in the management of chronic pain problems and in a tertiary care situation similar to those of the authors of this report, my personal assessment is that the frequency of unnecessary lumbar spine operations is again increasing dramatically. I attribute this to the development of the so-called “spine surgeon.” Although frequently well trained from a technical standpoint, many so-called spinal surgeons, in my opinion, overemphasize the physical aspects of the patient's problem, neglecting the psychosocial factors. Whereas 10 years or so ago, the incidence of patients referred to me with multiple back operations was declining, I am now beginning to see a significant upswing in patients with more than two and as many as five or six or more repetitive lumbar spinal operations, including extensive fusions and instrumentations without benefit.

The authors of this report bring to our attention the crucial importance of psychosocial factors in patients complaining of chronic low-back pain. Greater attention to these factors may improve the outcome of the treatment of such patients and, it is hoped, lead to a decrease in unnecessary spinal operations.

**Ronald F. Young**

Orange, California

KEY WORDS: Backache; Lumbar vertebrae; Myofascial pain syndromes; Pain

IMAGE GALLERY

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	Group 1 Myofascial Pain (n = 94)	Group 2 Herniated Disc (n = 37)
Gender		
Male	54%	47%
Female	46%	53%
Workers' compensation		
Yes	35%	25%
No	65%	75%
Surgery		
Yes	24%	34%
No	76%	66%
Employment		
Yes	31%	34%
No	69%	66%
Marital status		
Yes	79%	69%
No	21%	31%

\* Group 1, myofascial pain; Group 2, herniated disc. No significant differences were obtained.

Table 1. Cross-sectional Demographic Variables by Diagnostic Group

Table 1

	Group 1 Myofascial Pain	Group 2 Herniated Disc	t value
Age	41.6	44.2	1.0080
Education	12.5	13.4	1.4957
Disability (mo)	27.4	12.1	16.7169*

\* Group 1, myofascial pain; group 2, herniated disc. \* Significant at P < 0.0001.

Table 2. Cross-sectional Demographic Variables by Diagnostic Group

Table 2

Measure	Group 1 (SD) Myofascial Pain	Group 2 (SD) Herniated Disc	Mean (SD)
Total pain <sup>a</sup>			
WC	18 (12)	20 (9)	19 (11)
No WC	17 (16)	14 (9)	16 (10)
Mean	17 (13)	15 (9)	
Pain at its worst <sup>b</sup>			
WC	4.6 (3)	4.7 (3)	4.6 (3)
No WC	4.2 (3)	4.3 (3)	4.3 (3)
Mean	4.4 (3)	4.4 (3)	
Pain of the last <sup>c</sup>			
WC	1.9 (1)	1.8 (1)	1.8 (1)
No WC	1.8 (1)	1.1 (1)	1.5 (1)
Mean	1.9 (1)	1.2 (1)	
Disability total <sup>d</sup>			
WC	9 (2)	9 (2)	9 (2)
No WC	7 (2)	7 (2)	7 (2)
Mean	8 (2)	7 (2)	
Global Severity Index <sup>e</sup>			
WC	63 (14)	61 (10)	62 (11)
No WC	57 (12)	54 (9)	57 (10)
Mean	59 (13)	57 (10)	

<sup>a</sup> Total Pain from the McGill Pain Questionnaire, number of endorsed pain descriptors, range from 0 to 49. WC, Worker's Compensation. See text for significance levels.  
<sup>b</sup> Worst Rating, range from 1 (no pain) to 6 (unbearable).  
<sup>c</sup> Number of disabilities endorsed, range from 0 to 12.  
<sup>d</sup> Global Severity Index from PCS-16, a measure of psychological distress, range of 8 scores from 24 to 73 for females and from 39 to 69 for males, mean of 50 and SD of 10 for asymptomatic women.

Table 3. Means and Standard Deviations of Dependent Measures by Diagnostic Group and Worker Compensation Status

Table 3

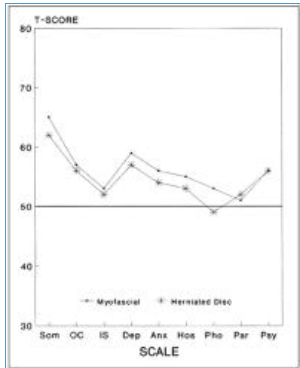


Figure 1

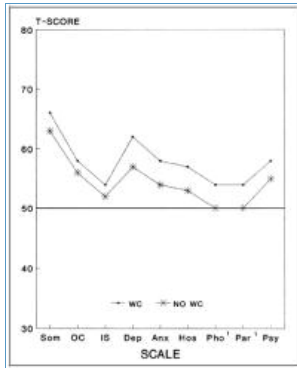


Figure 2

**LEGACY**

**MEDICINE AND NEUROSURGERY: PEOPLE, THE ARTS, AND LETTERS**

One of the most original and important of American poets, a practical pediatrician by avocation (he is New Jersey. He thought his roles as doctor and poet overlapped each other. He wrote *Poems*, a major American philosophical poem.

See abstract on page 96.

Figure 3

Back to Top