

## PAIN EVALUATION OF PATIENTS WITH FIBROMYALGIA, OSTEOARTHRITIS, AND LOW BACK PAIN

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The purpose of this study was to evaluate and compare pain as reported by outpatients with fibromyalgia, osteoarthritis, and low back pain, in view of designing more adequate physical therapy treatment.

**Patients and Methods:** A Portuguese version of the McGill Pain Questionnaire — where subjects are asked to choose, from lists of pre-categorized words, one or none that best describes what they feel — was used to assess pain intensity and quality of 64 patients, of which 24 had fibromyalgia, 22 had osteoarthritis, and 18 had low back pain. The pre-categorized words were organized into 4 major classes – sensory, affective, evaluative, and miscellaneous.

**Results:** Patients with fibromyalgia reported, comparatively, more intense pain through their choice of pain descriptors, both sensory and affective; they also chose a higher number of words from these classes than patients in the other groups and were the only ones to choose specific affective descriptors such as “vicious”, “wretched”, “exhausting”, “blinding”.

**Conclusion:** Assuming that each disease presents unique qualities of pain experience, and that these can be pointed out by means of this questionnaire by patients’ choice of specific groups of words, the findings suggest that fibromyalgia include not only a physical component, but also a psycho-emotional component, indicating that they require both emotional/affective and physical care.

**DESCRIPTORS:** Pain. Chronic pain assessment. Fibromyalgia. McGill Pain Questionnaire. Physical Therapy.

Evaluation of the pain experience is a complex procedure because pain is a subjective phenomenon, and its expression and interpretation involve sensorial, emotional, and cultural elements<sup>1</sup>. Proper pain assessment may be an important guide in establishing a physical therapy program that will improve a patient’s condition and quality of life.

The objective of this study was to assess pain intensity and quality, as felt by outpatients. Patients who sought treatment had diagnoses of fibromyalgia, osteoarthritis, and low back pain, among others. As it is well known, pain is hard to describe; pa-

tients often do not seem to find the proper words to do so. Furthermore, patients’ complaints seem to vary according to each one’s pain etiology. Fibromyalgia is a chronic pain syndrome with unknown etiology; the main symptoms are generalized muscular pain, fatigue, sleep disturbances, and pain and tenderness on palpation at specific tender points. Osteoarthritis is a rheumatic degenerative illness that

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affects synovial joints, eventually leading to fibrillation and cartilage fissures or microfractures. Low back pain is a clinical condition of moderate or intense pain at the lower part of the vertebral column. The comparison of pain experience among patients with fibromyalgia, osteoarthritis, and low back pain should allow for designing more adequate treatment and lead to more effective pain relief.

Among various methods used in both research and clinics for assessing pain intensity (visual analogue scale, body maps, graphic rating scale), the McGill Pain Questionnaire<sup>2</sup> was cho-

sen for its widely established reliability. The short form of the McGill Pain Questionnaire was designed to measure three different components of pain — sensory, affective, and evaluative<sup>3</sup>. It has wide acceptance, having proved to be sensitive at evaluating pain among patients with osteoarthritis<sup>4</sup>, vertebral discal hernia<sup>5</sup>, and cancer<sup>6</sup>.

**PATIENTS AND METHODS**

The 64 patients who took part in the study were divided into 3 groups: the first group had 24 patients (22 women) with fibromyalgia, average age 45, selected according to criteria established by the American College of Rheumatology<sup>7</sup>; the second group was formed by 22 patients (21 women) with osteoarthritis, average age 64 and the third group was formed by 18 patients (15 women) with chronic low back pain, average age 51. The purpose of the study and the procedure to be used was explained to patients. Patients were then interviewed individually and privately so as to obtain answers to the questionnaire. All subjects signed an informed consent form prior to the interview.

Data were collected by means of a short form of the McGill Pain Questionnaire (MGPQ)<sup>2</sup>, translated into Portuguese by the Pain Group at HCFMUSP<sup>1</sup>. The procedure used to construct the Portuguese version, such as translation by English native speaker professionals and assessment by judges, was similar to the that used for versions into Italian, Spanish, Danish, German, and Finnish versions; unlike these, though, the Portuguese version was, in addition, successively submitted to patient assessment and then back to judges for adjustments. Its validation was assured through application to patients having chronic pain of multiple etiologies<sup>1</sup>. The questionnaire consists of a list of 78 pain descriptors organized into 4 major classes (sensory, af-

fective, evaluative, and miscellaneous) and 20 subclasses, each made up of at least 2 and at most 6 words, to which are assigned intensity values.

The application of the MGPQ usually consists of presenting patients the list of descriptors for each subclass, from which they pick the word that best describes their pain experience (or simply choose none). For this study, since many patients had difficulty reading, the therapist prepared 20 white cards measuring 7 cm X 8 cm showing the subclass descriptors in large print. When showing the patient a card, the therapist read each descriptor aloud along with the patient, making sure each word was known to him or her and understood (words were repeated as often as needed, or even explained, in case the patient could not understand). The patient was then asked to say aloud clearly the word — or choose none — that best described pain he or she felt. The cards were presented at the same sequence in which the subclasses are listed at the MGPQ. The therapist took careful note of the answers to the MGPQ protocol. The values of the chosen words were added, becoming the pain-rating index (PRI). The number of words chosen by each patient was also recorded. Meanwhile an assistant, sitting at the farthest corner of the room, would take note of the 20 words chosen on a sheet of paper (one for each patient). The interview with each patient took an average of 30 minutes.

Reliability of measurements was assured by comparing, for each patient, the notes taken by the assistant and the therapist’s protocol: out of 1280 answers (20 answers X 64 patients), only 2 discrepancies were found (0.15%). Each patient’s pain intensity was first measured through the score reached with every class of descriptors. Since classes have different numbers of descriptors (sensory 42, affective 14, evaluative 5, miscellaneous 17), multivariate analysis of variance (MANOVA)<sup>1</sup> was applied to test frequency distribution score means (in percent). Mean class scores and overall scores were calculated for each group of patients and were also statistically analyzed for comparisons. Data analysis considered only descriptors grouped at the sensory, affective, and evaluative classes — the latter, as the name suggests, being used to confirm data obtained for the other two classes.

**RESULTS**

Table 1 shows mean scores of pain intensity by descriptor class and patient group, also indicating the standard error in each case. It may be noticed that indices are higher among patients with fibromyalgia in the affective category.

Figure 1 shows confidence intervals for the three groups’ averages in sensory and affective categories, highlighting the higher pain level of patients with fibromyalgia.

**TABLE 1 - Average pain intensity for the 3 groups of patients by class of descriptor.**

Descriptor class	Patient group	Average	Standard error	N
Sensory (%)	Osteoarthritis	44.0	3.34	22
	Fibromyalgia	46.3	3.20	24
	Low back pain	41.1	3.69	18
	TOTAL	44.0	1.95	64
Affective (%)	Osteoarthritis	41.2	4.32	22
	Fibromyalgia	59.2	4.14	24
	Low back pain	45.2	4.78	18
	TOTAL	49.1	2.70	64

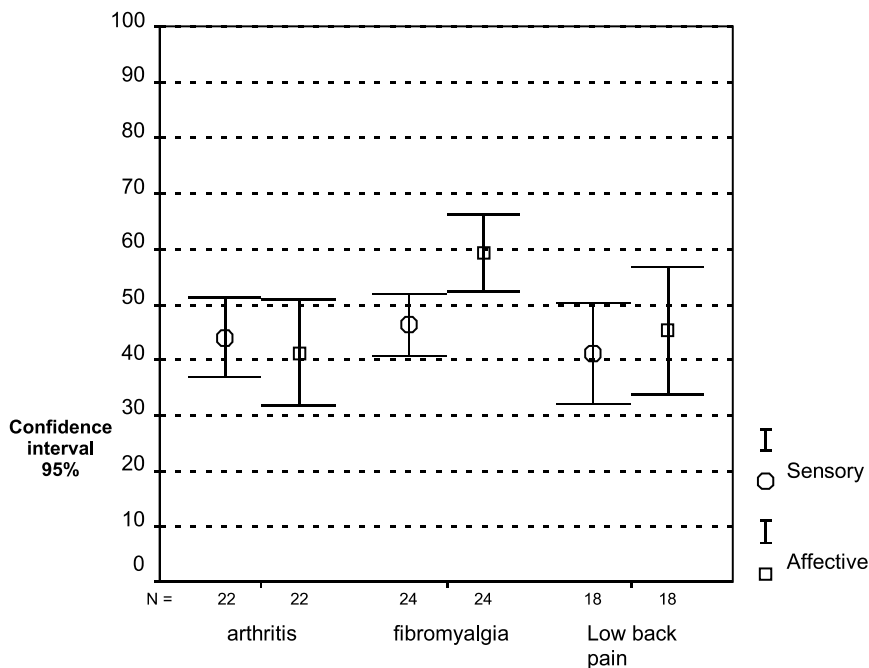


Figure 1 - Confidence intervals for the averages of sensory and affective class descriptors .

The null hypothesis of score mean equality of the sensory and affective pain intensity classes was tested among the three groups using MANOVA. At a significance level of 0.05, the null hypothesis was rejected with a descriptive level of 0.034<sup>2</sup>.

Two univariate analyses of variance (ANOVA) were performed, one for each class, among the three groups. For the sensory class scores, the null hypothesis of equality of the averages among the three groups was not rejected at significance level of 0.05 (osl=0.572); for the affective class, the same hypothesis was rejected (osl=0.01).

Multiple comparisons were done using Bonferroni's method (sl=0.05) on the means of pain intensity for affective class scores, thereby rejecting hypotheses of mean equality between the fibromyalgia group, on one hand, and the osteoarthritis and low back pain ones, on the other (sl=0.012; 0.093). However, the hypothesis of equality between the means for the osteoarthritis and low-back-pain groups was not rejected (sl=1.00).

According to the Melzack<sup>3</sup> and Graham<sup>6</sup> approach, in order for a descriptor to be considered specific for a group of patients, it must be chosen by at least a third of the subjects. Although a high number of words were chosen by patients in all three groups, only 11

descriptors fulfilled that criterion in the fibromyalgia group, 8 in the osteoarthritis group, and 8 in the low back pain group. Table 2 (first section) shows frequency of sensory descriptor selection by participants of each group (data in percent). Throbbing was the most mentioned pain descriptor by all groups.

Table 2 (second section) shows frequency of descriptor selection in the affective class. Seven descriptors were considered specific of the fibromyalgia group, 3 of the osteoarthritis, and 3 of the low back pain group. The most frequently mentioned descriptor, by both the fibromyalgia (91%) and the low back pain (52%) groups, was "sickening"; among osteoarthritis patients, the most frequent descriptor was "tiring" (82%). Descriptors selected exclusively by patients with fibromyalgia were "vicious", "wretched", "blinding", and "exhausting".

As it may be seen in table 3, 58.3% of patients with fibromyalgia chose descriptors classifying their pain as miserable, intense, and unbearable, that is, precisely those referring to more intense pain. Patients from the osteoar-

TABLE 2 - Frequencies of descriptor selection in the sensorial class.

Fibromyalgia (n= 24)		Osteoarthritis (n= 22)		Low back pain (n=18)	
Throbbing	(61%)	Throbbing	(65%)	Throbbing	(70%)
Pricking	(56%)	Jumping	(56%)	Jumping	(55%)
Flashing	(52%)	Pricking	(52%)	Burning	(50%)
Tender	(52%)	Sharp	(47%)	Pricking	(40%)
Tingling	(52%)	Tingling	(43%)	Sore	(40%)
Sharp	(43%)	Burning	(39%)	Tender	(35%)
Jumping	(40%)	Sore	(34%)	Wrenching	(35%)
Burning	(39%)	Aching	(34%)	Smarting	(35%)
Sore	(39%)				
Tugging	(34%)				
Aching	(34%)				

Frequencies of descriptor selection in the affective class					
Fibromyalgia (n= 24)		Osteoarthritis (n= 22)		Low back pain (n=18)	
Sickening	(91%)	Tiring	(82%)	Sickening	(52%)
Grueling	(69%)	Sickening	(69%)	Tiring	(47%)
Tiring	(65%)	Punishing	(34%)	Grueling	(39%)
Vicious	(47%)				
Wretched	(43%)				
Blinding	(39%)				
Exhausting	(34%)				

**TABLE 3** - Distribution of evaluative class descriptors selected by the 3 groups of patients.

Descriptor	Fibromyalgia (n=24) (%)	Osteoarthritis (n=22) (%)	Low back pain (n=18*) (%)
Annoying	8.3	13.6	16.7
Troublesome	33.3	59.1	50
Miserable	25.0	4.5	-
Intense	8.3	13.6	-
Unbearable	25.0	9.1	22.2

\* Two patients (11.1%) of this group selected none.

thritis and low back pain groups chose descriptors that point out to less intense pain: “annoying” and “troublesome”.

## DISCUSSION

Pain being the main complaint of rheumatology clinic patients, its more accurate assessment may be an important tool for designing therapy that brings relief.

Due to the subjective character of pain, it is not possible, in the clinic situation, to report the original pain sensation combining its quality and intensity; patients often lack accuracy when describing pain. On the other hand, accurate, measurable information is needed to design suitable treatment, taking into account sensory, affective, psychological, and cultural pain components.

In this study, the McGill Pain Questionnaire proved to be a useful instrument for assessing patients' pain quality and intensity. It has been used in diverse clinical situations<sup>4,5,6</sup> and has proved reliable and effective at assessing pain. It might be objected that, in case a patient were not familiar with certain words, he or she might end up by choosing a descriptor merely for its being ‘easier’ or of more common usage. However, the very principle that guides the construction of the questionnaire assures words of daily usage: it proposes to overcome the difficulty of translating feelings into words by suggesting “analogy with sensations produced by known causes”.

Since the method consists basically in the choice of words, it can obviously only be used in the patients' mother tongue. When translating and adapting the MGPQ into Portuguese, Pimenta and Teixeira<sup>1</sup> followed the same principles and carried out extensive and meticulous tests with patients to make sure the descriptors proposed were adequate (when not understood or agreed upon by at least 15% of patients with chronic pain, words were sent back to judges to be modified, then submitted again to patients, until 96% of them approved of all word<sup>1</sup>). Thus, for instance, the experience of contact with the tip of a pin is evoked as a ‘prickling’ sensation. By drawing on everyday objects and the respective sensations they produce, therefore, the questionnaire's list of descriptors contained no difficult words. Furthermore, in the present study, the therapist checked that each patient understood each word at every card shown by reading each aloud (thus overcoming the case the patient could not read but was ashamed to say so) and by calmly repeating a descriptor as many times as necessary, assuring the patient knew its meaning.

Wagstaff et al.<sup>4</sup>, Dubuisson & Melzack<sup>5</sup>, and Pimenta & Teixeira<sup>1</sup> have all used the McGill Pain Questionnaire to evaluate pain in chronic patients, suggesting that each pathology presents unique qualities of the pain experience, and that these could be translated by groups of specific words, chosen by the patients. The

present study shows this to be particularly true in the case of fibromyalgia.

Indeed, patients with fibromyalgia selected a larger number of descriptors in two categories, especially pain descriptors classified as affective (Table 2). Some descriptors were found to be specific of this group, such as “vicious”, “wretched”, “blinding”, and “exhausting”, suggesting they may be words that are characteristic of pain among fibromyalgia patients. As for the other two groups of patients, no significant specific pain descriptors have emerged. These findings show clearly that patients with fibromyalgia report more intense pain when compared to patients with osteoarthritis or chronic low back pain; additionally, they chose a larger number of affective pain descriptors in relation to the other groups. Following the same pattern for sensory class descriptors, data on affective class for patients with fibromyalgia present higher homogeneity and higher frequency of selected descriptors.

Results obtained here are similar to those of Perry et al.<sup>8</sup>, Viitanen et al.<sup>9</sup>, and Russel et al.<sup>10</sup>, who found significantly more intense pain in patients with fibromyalgia than in those with rheumatoid arthritis or osteoarthritis. However, having used the rating scale and the McGill Pain Questionnaire, Leavitt et al.<sup>11</sup> did not find differences in reporting pain intensity among patients with fibromyalgia and arthritis.

Nonetheless, all agree with findings from clinical practice, that chronic pain is rheumatic patients' main symptom, generating inability for professional, social, and family activities; it often leads to depression, anxiety, hostility, adoption of specific postures, increased body concern and longer daily rest periods, thus bringing forth economic and social setbacks<sup>12</sup>.

As shown in this study, in the case of patients with fibromyalgia, the higher frequency of selection of affective pain descriptors by them may in-

dicare that, besides physical ailment, their pathology also includes a psycho-emotional component.

Furthermore, during the short conversation established with each patient prior to the application of the questionnaire, their clinical claims were often followed by complaints of socioeconomic nature, with emphasis on family problems.

## CONCLUSION

One of the aims of physical therapy

is to reduce patients' pain. Particularly in the case of patients with fibromyalgia, whose main symptom is pain, its evaluation should be a current clinical practice, in order to design a more suitable treatment. Used along with other instruments, such as the visual analogue scale, the McGill Pain Questionnaire might also be used both to evaluate patients when they first come to the clinic and after treatment to assess the impact of therapy. Furthermore, this study has found that patients with fibromyalgia experience more intense pain than other groups of

patients, relying strongly on affective pain descriptors. Since the aim of physical therapy in treating patients with fibromyalgia is to improve their quality of life, and considering the psychic/emotional aspects of their pain experience, we suggest that, besides physical care, they should receive multidisciplinary support, involving an educational process that might include change of postural habits and a comprehensive understanding of their syndrome, thus learning better ways to deal with their own pain.

## RESUMO

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MARQUES AP e col. - Avaliação da dor em pacientes com fibromialgia, osteoartrite e lombalgia. **Rev. Hosp. Clín. Fac. Med. S. Paulo** 56(1):5-10, 2001.

Este estudo teve como objetivo, avaliar e comparar a intensidade da dor referida por pacientes com fibromialgia, osteoartrite e lombalgia visando propor o tratamento fisioterapêutico mais adequado para estes grupos de pacientes.

**Pacientes e Métodos:** Participaram do estudo 64 pacientes, sendo 24 com fibromialgia, 22 com osteoartrite e 18 com lombalgia. Foi utilizada a versão

em português do Questionário de Dor da McGill onde os sujeitos deveriam escolher uma ou nenhuma palavra de uma lista de palavras organizadas em quatro categorias: sensorial, afetiva, avaliativa e micelânea, a que melhor descrevesse a dor que eles sentiam.

**Resultados:** Os pacientes com fibromialgia referiram, comparativamente, dor mais intensa o que pode ser observado através da escolha de um número mais alto de descritores das categorias afetiva e sensorial do que os outros dois grupos e somente eles escolheram específicos descritores afetivos tais como: "maldita", "miserável", "exaustiva", "enlouquecedora".

**Conclusão:** A partir dos dados, pudemos verificar que cada patologia apresenta uma qualidade única de experiência da dor, já que houve escolha de palavras específicas pelos pacientes dos três grupos, sugerindo que juntamente com tratamento físico, nos pacientes com fibromialgia, que mostraram um forte componente psico-emocional, sejam incluídos também, cuidados emocionais/afetivos.

**DESCRITORES:** Dor. Avaliação de dor crônica. Fibromialgia. Questionário de dor - McGill. Fisioterapia.

**REFERENCES**

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1. PIMENTA CAM & TEIXEIRA MJ - Proposta de adaptação do questionário de dor McGill para a língua portuguesa. **Rev Esc Enf USP** 1996; **70**: 473-83.
2. MELZACK R - The McGill Pain Questionnaire. In: MELZACK R, ed. **Pain Measurement and Assessment**. New York, Raven, 1983. p. 41-7.
3. MELZACK R - The McGill Pain Questionnaire: major properties and scoring methods. **Pain** 1975; **1**: 277-99.
4. WAGSTAFF S, SMITH OV & WOOD PHN - Verbal pain descriptors used by patients with arthritis. **Ann Rheum Dis** 1985; **44**:262-5.
5. DUBUISSON D & MELZACK R - Classification of clinical pain descriptions by multiple group discriminant analysis. **Exp Neurol** 1976; **51**: 480-7.
6. GRAHAM C - Use of the McGill questionnaire in the assessment of cancer pain: replicability and consistency. **Pain** 1980; **8**: 177-87.
7. WOLFE F, SMYTHE HA, YUNUS MB et al. - The American College of Rheumatology 1990 criteria for the classification of fibromyalgia; Report of the Multicenter Criteria Committee. **Arthritis Rheum** 1990; **33**:160-72.
8. PERRY F, HELLER P & LEVINE J - Differing correlations between pain measures in syndromes with or without explicable organic pathology. **Pain** 1988; **34**: 185-9.
9. VIITANEN JV, KAUTIAINEN H & ISOMÄKI H - Pain intensity in patients with fibromyalgia and rheumatoid arthritis. **Scand J Rheumatol** 1993; **22**: 131-5.
10. RUSSEL IJ, FLETCHER IM, TSUI J et al. - Comparisons of rheumatoid arthritis and fibrositis fibromyalgia syndrome using functional and psychological outcome measures. **Arthritis Rheum** 1989; **32** (supp): B121.
11. LEAVITT F, KATZ R, GOLDEN H et al. - Comparison of pain properties in fibromyalgia patients and rheumatoid arthritis patients. **Arthritis Rheum** 1986; **6**: 775-81.
12. TEIXEIRA MJ, SHIBATA MK, PIMENTA CAM et al. - **Dor no Brasil: estado atual e perspectivas**. São Paulo, Limay, 1995. p. 132-156.

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