The short-form McGill Pain Questionnaire

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Summary   A short form of the McGill Pain Questionnaire (SF-MPQ) has been developed. The main component of the SF-MPQ consists of 15 descriptors (11 sensory; 4 affective) which are rated on an intensity scale as 0 = none, 1 = mild, 2 = moderate or 3 = severe. Three pain scores are derived from the sum of the intensity rank values of the words chosen for sensory, affective and total descriptors. The SF-MPQ also includes the Present Pain Intensity (PPI) index of the standard MPQ and a visual analogue scale (VAS). The SF-MPQ scores obtained from patients in post-surgical and obstetrical wards and physiotherapy and dental departments were compared to the scores obtained with the standard MPQ. The correlations were consistently high and significant. The SF-MPQ was also shown to be sufficiently sensitive to demonstrate differences due to treatment at statistical levels comparable to those obtained with the standard form. The SF-MPQ shows promise as a useful tool in situations in which the standard MPQ takes too long to administer, yet qualitative information is desired and the PPI and VAS are inadequate.

Key words: Pain measurement; McGill Pain Questionnaire; (Short form)

Introduction

The McGill Pain Questionnaire (MPQ) [5] has become one of the most widely used tests for the measurement of pain. It provides valuable information on the sensory, affective and evaluative dimensions of pain experience and is capable of discriminating among different pain problems [7]. The MPQ is not a perfect tool and several variants have been developed [2,4,7]. Yet despite the usefulness of specialized alternative forms, the original MPQ is still commonly used in diagnosis and research on a wide variety of pain problems [7].

The MPQ takes 5–10 min to administer, which is too long for some studies. However, the alternative is the Present Pain Intensity (PPI) scale [5] or the visual analogue scale (VAS) [3], which provide data on intensity only and provide no data on the qualities of the pain. Clearly, a shortened version of the standard MPQ is desirable for some types of research (such as pharmacological studies) which require more rapid acquisition of data than the standard MPQ. The purpose of the present study was to develop and begin the initial evaluation of a short-form MPQ.

Methods

To develop a short form of the MPQ, the strategy was to select a small, representative set of words from the sensory and affective categories of the standard form, and to use the Present Pain Intensity (PPI) [5] and visual analogue scale (VAS) [3] to provide indices of overall intensity. The first step, therefore, was to display the descriptors chosen by 33% or more of patients with the following types of pain: labour, menstrual, headache, phantom, post-herpetic, dental, cancer, arthritis and low-back pain [1,2,4,5]. The display revealed that the following sensory words were the most commonly used: throbbing, shooting stabbing, sharp, cramping, gnawing, hot-burning, aching, heavy and tender. An additional sensory word — splitting — was added because it was reported to be a key discriminative word for dental pain [1]. In the affective category, the most frequently used words were: tiring-exhausting, sickening, fearful and cruel-punishing. Subsequent studies were carried out with these descriptors presented in the form shown in Fig. 1.

A Quebec-French version was also used with the following translations of the descriptors: 1, qui bat; 2, fulgurante; 3, qui poignarde; 4, vive; 5, qui crampe; 6, qui ronge; 7, chaude-brûlante; 8, pénible; 9, poignante; 10, sensible; 11, qui fend; 12, fatiguante-épuisante; 13, écourante; 14, épeurante; 15, violente-cruelle; the intensity words for the descriptors were: 0, pas de douleur; 1, faible; 2, modérée; 3, forte; the PPI words were 0, pas de douleur; 1, faible; 2, inconfortable; 3, forte; 4, sévère; 5, insupportable; the VAS was anchored by: pas de douleur and douleur extrême.

Data were obtained from patients at the Montreal General Hospital after they consented to take part in a study to obtain information on the qualities and intensity of pain. The procedure used in the development of the standard MPQ [5] was also employed in this study. For the standard long form (LF-MPQ), the sets of descriptors were read to the patient who was asked to choose the words that best described his/her pain. For the short form (SF-MPQ), the patients were told that a set of pain descriptors would be read aloud and the patients should state whether the word described their pain and, if it did, to rate the intensity of that particular quality of the pain. The questionnaire was placed in front of the patient and the experimenter put checkmarks in the appropriate spaces. The patient made the mark on the VAS.

The first study presented the standard long form (LF) and the short form (SF) of the MPQ to patients in post-surgical (N = 40) and obstetrical (N = 20) wards, as well as patients with musculoskeletal (low-back and neck-and-shoulder) pain in a

SHORT-FORM McGILL PAIN QUESTIONNAIRE

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PATIENT'S NAME: _____   DATE: _____

	NONE	MILD	MODERATE	SEVERE
THROBBING	0) _____	1) _____	2) _____	3) _____
SHOOTING	0) _____	1) _____	2) _____	3) _____
STABBING	0) _____	1) _____	2) _____	3) _____
SHARP	0) _____	1) _____	2) _____	3) _____
CRAMPING	0) _____	1) _____	2) _____	3) _____
GNAWING	0) _____	1) _____	2) _____	3) _____
HOT-BURNING	0) _____	1) _____	2) _____	3) _____
ACHING	0) _____	1) _____	2) _____	3) _____
HEAVY	0) _____	1) _____	2) _____	3) _____
TENDER	0) _____	1) _____	2) _____	3) _____
SPLITTING	0) _____	1) _____	2) _____	3) _____
TIRING-EXHAUSTING	0) _____	1) _____	2) _____	3) _____
SICKENING	0) _____	1) _____	2) _____	3) _____
FEARFUL	0) _____	1) _____	2) _____	3) _____
PUNISHING-CRUEL	0) _____	1) _____	2) _____	3) _____

NO   WORST

PAIN |——| POSSIBLE

                                                PAIN

P P I

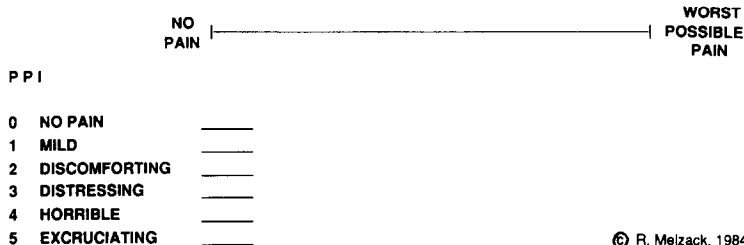| 0	NO PAIN	_____
1	MILD	_____
2	DISCOMFORTING	_____
3	DISTRESSING	_____
4	HORRIBLE	_____
5	EXCRUCIATING	_____

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Fig. 1. The short-form McGill Pain Questionnaire (SF-MPQ). Descriptors 1–11 represent the sensory dimension of pain experience and 12–15 represent the affective dimension. Each descriptor is ranked on an intensity scale of 0 = none, 1 = mild, 2 = moderate, 3 = severe. The Present Pain Intensity (PPI) of the standard long-form McGill Pain Questionnaire (LF-MPQ) and the visual analogue (VAS) are also included to provide overall intensity scores.

physiotherapy department (N = 10). Thirteen patients on the post-surgical wards were French-speaking and were given the French version of the SF-MPQ. The forms were presented to all patients in a single order — LF followed by SF. The patients were tested before and 30 min after medication or other therapy for pain. The women in labour received epidural blocks and the patients in physiotherapy

received TENS therapy. The post-surgical patients received standard doses of narcotic and non-narcotic medication. (See ref. 6 for information on medications administered on this ward for pain relief.)

Because the order of presentation of the long and short forms may have influenced the correlations obtained, a second study was carried out with patients suffering post-surgical (N = 31) and dental (N = 31) pain. In both groups, patients were assigned an order — LF followed by SF or vice versa — on the basis of a computer-generated list of random orders.

Results

Table I shows that the sensory, affective and total scores of the short (S) and long (L) forms of the MPQ are significantly correlated. This is the case for all of the

TABLE I

CORRELATION COEFFICIENTS BETWEEN PAIN RATING SCORES OBTAINED WITH THE SHORT (S) AND LONG (L) FORMS OF THE MPQ ADMINISTERED BEFORE AND AFTER A THERAPEUTIC INTERVENTION

Short form: pain rating scores are the sum of the intensity values for the descriptors in each subclass. Long form: pain rating index scores are the sum of the rank values for each subclass. S, sensory; A, affective; T, total; PPI, present pain intensity; VAS, visual analogue scale.

	(S)S-(L)S	(S)A-(L)A	(S)T-(L)T	(L)T-PPI	(S)T-PPI	(L)T-VAS	(S)T-VAS
Postsurgical pain (N = 27)							
Before r	0.68	0.69	0.77	0.52	0.67	0.73	0.78
P	0.001	0.001	0.001	0.003	0.001	0.001	0.001
After r	0.83	0.79	0.88	0.81	0.71	0.87	0.85
P	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Labour pain (N = 20)							
Before r	0.65	0.82	0.81	0.61	0.51	0.55	0.60
P	0.001	0.001	0.001	0.002	0.01	0.006	0.003
After r	0.87	0.94	0.92	0.89	0.83	0.73	0.68
P	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Musculoskeletal pain (N = 10)							
Before r	0.67	0.70	0.93	0.38	0.32	0.64	0.68
P	0.02	0.01	0.001	NS	NS	0.02	0.01
After r	0.70	0.84	0.70	0.73	0.74	0.78	0.61
P	0.01	0.001	0.01	0.008	0.006	0.003	0.03
Postsurgical pain (French) (N = 13)							
Before r	0.88	0.87	0.91	0.70	0.70	0.87	0.86
P	0.001	0.001	0.001	0.004	0.004	0.001	0.001
After r	0.75	0.78	0.80	0.89	0.72	0.78	0.78
P	0.001	0.001	0.001	0.001	0.002	0.001	0.001

TABLE II

MEAN PAIN RATING VALUES FOR 3 KINDS OF PAIN OBTAINED WITH THE SHORT (S) AND LONG (L) FORMS OF THE MPQ ADMINISTERED BEFORE AND AFTER A THERAPEUTIC INTERVENTION

Analgesic drugs were given to patients with post-surgical pain; epidural anaesthetics were administered to women in labour; transcutaneous electrical nerve stimulation was given to patients with musculoskeletal pain. S, sensory; A, affective; T, total. P values are based on 2-tailed t tests.

	Short form			Long form			PPI	VAS
	S	A	T	S	A	T		
Postsurgical pain (N = 27)								
Before x̄	11.7	3.7	15.4	17.2	3.2	27.9	2.6	5.2
(S.D.)	(7.2)	(3.5)	(9.6)	(7.6)	(3.4)	(13.1)	(0.9)	(2.3)
After x̄	6.9	2.2	9.1	9.7	1.3	15.1	1.5	2.4
(S.D.)	(7.3)	(2.8)	(9.7)	(8.4)	(2.2)	(13.0)	(1.1)	(1.8)
P	0.001	0.01	0.001	0.001	0.01	0.001	0.001	0.001
Labour pain (N = 20)								
Before x̄	13.4	3.9	17.2	20.0	4.0	32.8	2.5	5.0
(S.D.)	(7.8)	(3.9)	(11.0)	(6.6)	(3.6)	(12.1)	(1.1)	(2.3)
After x̄	1.0	0.2	1.1	1.9	0.1	3.1	0.4	0.5
(S.D.)	(2.0)	(0.5)	(2.4)	(3.5)	(0.3)	(5.8)	(0.6)	(0.9)
P	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Musculoskeletal pain (N = 10)								
Before x̄	11.1	4.6	15.7	14.6	3.1	24.3	2.3	4.1
(S.D.)	(8.7)	(3.7)	(11.9)	(7.8)	(4.0)	(12.4)	(1.0)	(1.6)
After x̄	3.3	1.0	4.3	4.7	0.6	7.8	1.3	2.0
(S.D.)	(3.3)	(1.7)	(4.9)	(2.9)	(0.7)	(5.3)	(1.0)	(1.3)
P	0.03	0.008	0.02	0.005	0.009	0.005	0.004	0.004
Postsurgical pain (French) (N = 13)								
Before x̄	11.5	3.9	15.5	16.2	4.3	27.6	3.2	4.9
(S.D.)	(7.7)	(3.0)	(10.3)	(9.5)	(3.5)	(16.5)	(1.2)	(2.6)
After x̄	5.7	1.9	7.5	8.0	1.3	13.4	1.4	2.9
(S.D.)	(5.0)	(2.2)	(7.1)	(5.7)	(1.8)	(9.0)	(0.9)	(2.1)
P	0.001	0.003	0.001	0.001	0.004	0.001	0.001	0.001

types of pain which were studied, for pain before and after a treatment, and for the French as well as the English form. Moreover, Table II shows that both the SF- and LF-MPQ demonstrated the significant effects of analgesic drugs (in post-surgical pain patients), epidural blocks (in women in labour) and TENS in patients treated for musculoskeletal pains.

The sensory, affective and total pain scores in Table II are determined by the percentages of patients who chose each descriptor and the mean intensity (from 1 to 3) attributed to it. Each of these quantities can be displayed separately and thereby provide a profile of the qualitative properties of different types of pain and the effects of drugs and other therapeutic procedures. Fig. 2 shows these scores. Each column displays bar graphs of the percentages of patients who chose each descriptor
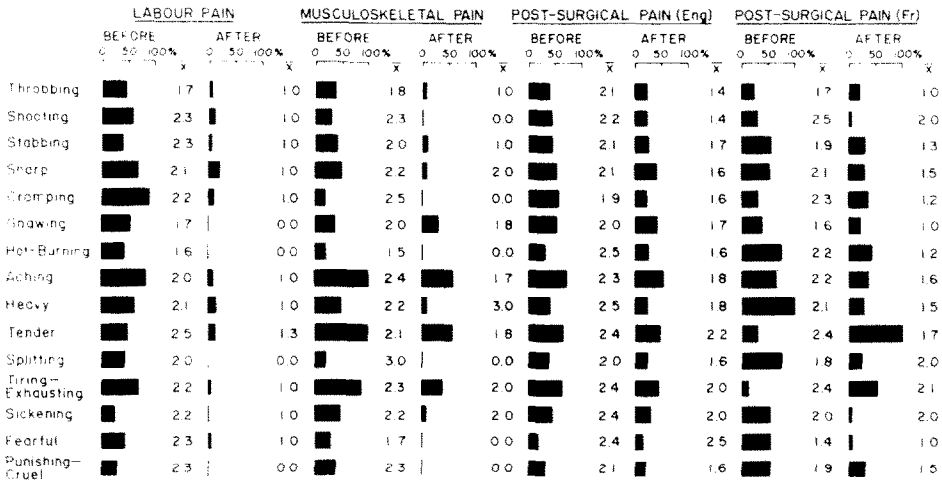
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Fig. 2. Profiles of descriptors chosen and relative intensities of each for labour, musculoskeletal and post-surgical pain. Bar graphs of the percentages of patients who chose each descriptor and the mean intensity (from 1 to 3) ascribed to each are presented. Data are shown before and after epidural block for labour pain, TENS for musculoskeletal pain, and standard medication for post-surgical pain.

and the mean intensity attributed to that quality. It is evident that epidural blocks given to women in labour and TENS administered for musculoskeletal pain produce striking reductions in pain, in terms of both percentage of patients who chose particular descriptors and the mean intensities of each. In contrast, post-surgical pain is relatively less affected by the administration of standard doses of analgesic drugs [cf., 6] although the decreases are statistically significant (Table II) for both the English- and French-speaking groups. This display also demonstrates graphically the differences in the qualities of pain characteristic of each type of pain and

TABLE III

CORRELATION COEFFICIENTS BETWEEN PAIN RATING SCORES OBTAINED WITH THE SHORT (S) AND LONG (L) FORMS OF THE MPQ PRESENTED TO PATIENTS IN TWO ORDERS; (L) (S) AND (S) (L)

		Postsurgical pain			Dental pain		
		(S)S-(L)S	(S)A-(L)A	(S)T-(L)T	(S)S-(L)S	(S)A(L)A	(S)T-(L)T
Order (L) (S)	N	15	15	15	16	16	16
	r	0.84	0.78	0.86	0.80	0.64	0.87
	P	0.001	0.001	0.001	0.001	0.004	0.001
Order (S) (L)	N	16	16	16	15	15	15
	r	0.66	0.90	0.67	0.87	0.62	0.87
	P	0.003	0.001	0.002	0.001	0.007	0.001

the different effects of therapy on each quality. The apparent differences between the 2 linguistic groups with post-surgical pain are not statistically significant either before or after drug intake.

Table III shows that the order of presentation of the short and long forms did not affect the high correlation levels. They were comparably high in both orders of presentation.

Discussion

The SF-MPQ appears to be a useful instrument. It correlates very highly with the major PRI indices (S, A, T) of the LF-MPQ, and is sensitive to traditional clinical therapies — analgesic drugs, epidural blocks, and TENS. It is not intended to take the place of the standard form, which provides more information, but rather was developed for use in specific studies when time to obtain information from patients is limited. The SF-MPQ should be useful in research which requires more information than that in the VAS or PPI but less than in the LF-MPQ. It takes about 2–5 min to administer, the words are simple and the intensity ranking of mild, moderate and severe was understood by every patient who was tested.

The data obtained with the SF-MPQ provide information on the sensory, affective and overall intensity of pain. Furthermore, the display of the data in Fig. 2 suggests that the SF-MPQ may be capable of discriminating among different pain syndromes, which is an important property of the standard long-form MPQ. However, this has yet to be demonstrated and appropriate studies are now needed to determine the relative strengths and weaknesses of the SF-MPQ. Like the LF-MPQ, the SF-MPQ should be tested by other investigators with other problems and in other contexts.

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