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The McGill Pain Questionnaire

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Clinical investigators have long recognized the varieties of pain. Descriptions of the burning qualities of causalgic pain (9) and the stabbing, cramping qualities of visceral pains (8) frequently provide the key to diagnosis and may even suggest the course of therapy (8,9). The layman is equally aware of the many qualities and dimensions of pain. An evening of radio, television, or newspaper commercials makes us aware of the splitting, pounding qualities of headaches, the gnawing, nagging pain of rheumatism and arthritis, and the cramping heavy qualities of menstrual pain. The word "pain," then, refers to an endless variety of qualities that are categorized under a single linguistic label (4,9).

In 1971, Melzack and Torgerson (13) began the specification of the qualities of pain. Words used to describe pain were brought together and categorized, and an attempt was made to scale them on a common intensity dimension. Their aim was to develop new approaches to the problem of describing and measuring pain.

CLASSIFICATION OF PAIN DESCRIPTORS

Dallenbach (1), in 1939, compiled a list of 44 words describing pain qualities, and classified some of the words into five groups characterizing (a) the temporal course of the experience, e.g., palpitating, throbbing; (b) its spatial distribution, e.g., penetrating, radiating; (c) its fusion or integration with pressure, e.g., heavy, pressing; (d) its affective coloring, e.g., savage, ugly; and (e) purely qualitative attributes, e.g., achey, bright, clear, dull, itchy, prickling, and quick.

Starting with Dallenbach's words, Melzack and Torgerson obtained additional words relating to pain from the clinical literature and from descriptions given by patients at hospital clinics. The final list contained 102 words. In the course of compiling the words, it was immediately apparent that the list, arranged in alphabetical order, was a meaningless jumble. They therefore attempted to put the words into classes and subclasses describing different aspects of the experience of pain.

In the first part of the study, physicians and other university graduates were asked to classify the words into small groups describing distinctly different qualities of pain. On the basis of the data, the words were categorized into 3 major classes

and 16 subclasses. The distribution of a portion of the words is shown in Fig. 1. The classes are: words that describe the sensory qualities of the experience in terms of temporal, spatial, pressure, thermal, and other properties; words that describe affective qualities in terms of tension, fear, and autonomic properties that are part of the pain experience; and evaluative words describing the subjective overall intensity of the total pain experience. Each subclass, given a descriptive label, consisted of a group of words that were considered by most subjects to be qualitatively similar. Some of these words were undoubtedly synonyms, others seemed to be synonymous but varied in intensity, whereas many had subtle differences or nuances (despite their similarities) that may be of importance to a patient who is trying desperately to communicate to a physician.

The second part of the study was an attempt to determine the pain intensities implied by the words within each subclass. Groups of doctors, patients, and students were asked to assign an intensity value to each word, using a numerical scale ranging from least (or mild) to worst (or excruciating) pain. When this was done, it was apparent that several words within each subclass had the same relative intensity relationships in all three sets. For example, in the spatial subclass, "shooting" was found to represent more pain than "flashing," which in turn implied more pain than "jumping." Although the precise intensity scale values differed for the three groups, all three agreed on the positions of the words relative to each other. The scale values of the words for patients, based on the precise numerical values listed by Melzack and Torgerson (13), are indicated in Fig. 1.

Because of the high degree of agreement on the intensity relationships among pain descriptors by subjects who had different cultural, socioeconomic, and educational backgrounds, a pain questionnaire (Fig. 2) was developed as an experimental tool for studies of the effects of various methods of pain management. In addition to the list of pain descriptors, the questionnaire contained line drawings of the body to show the spatial distribution of the pain, words that describe temporal properties of pain, and the overall present pain intensity (PPI). The PPI was recorded as a number from 1 to 5, in which each number was associated with the following words: 1, mild; 2, discomforting; 3, distressing; 4, horrible; 5, excruciating. The mean scale values of these words, which were chosen from the evaluative category, were approximately equally far apart (13), so that they represented equal scale intervals, thereby providing "anchors" for the specification of overall pain intensity.

In a preliminary study, the pain questionnaire consisted of the 16 subclasses of descriptors shown in Fig. 1, as well as the additional information deemed necessary for the evaluation of pain. It soon became clear, however, that many of the patients found certain key words to be absent. These words were then selected from the original word lists used (13), categorized appropriately, and ranked according to their mean scale values. A further set of words—cool, cold, freezing—was used by patients on rare occasions but was indicated to be essential for an adequate description of some types of pain. Thus, four supplementary, or "miscellaneous," subclasses were added to the word lists of the questionnaire (Fig. 2). The final classification, then, appeared to represent the most parsimonious and meaningful

FIG. 1. Spatial display of pain descriptors based on intensity ratings by patients. The intensity scale values range from 1 (mild) to 5 (excruciating). **(From Melzack and Torgerson,** ref. 13.)

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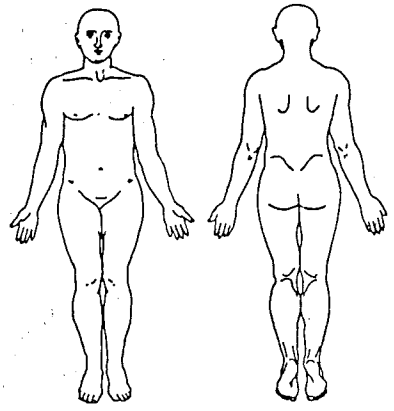
McGill Pain Questionnaire

Patient's Name _____ Date _____ Time _____ am/pm

PRI: S _____ (1-10) A _____ (11-15) E _____ (16) M _____ (17-20) PRI(T) _____ (1-20) PPI _____

1 FLICKERING	11 TIRING	BRIEF	RHYTHMIC	CONTINUOUS
QUIVERING	EXHAUSTING	MOMENTARY	PERIODIC	STEADY
PULSING	12 SICKENING	TRANSIENT	INTERMITTENT	CONSTANT
THROBBING	SUFFOCATING			
BEATING	13 FEARFUL			
POUNDING	FRIGHTFUL			
2 JUMPING	TERRIFYING			
FLASHING	14 PUNISHING			
SHOOTING	GRUELLING			
3 PRICKING	CRUEL			
BORING	VICIOUS			
DRILLING	KILLING			
STABBING	15 WRETCHED			
LANCINATING	BLINDING			
4 SHARP	16 ANNOYING			
CUTTING	TROUBLESOME			
LACERATING	MISERABLE			
5 PINCHING	INTENSE			
PRESSING	UNBEARABLE			
GNAWING	17 SPREADING			
CRAMPING	RADIATING			
CRUSHING	PENETRATING			
6 TUGGING	PIERCING			
PULLING	18 TIGHT			
WRENCHING	NUMB			
7 HOT	DRAWING			
BURNING	SQUEEZING			
SCALDING	TEARING			
SEARING	19 COOL			
8 TINGLING	COLD			
ITCHY	FREEZING			
SMARTING	20 NAGGING			
STINGING	NAUSEATING			
9 DULL	AGONIZING			
SORE	DREADFUL			
HURTING	TORTURING			
ACHING				
HEAVY	PPI			
10 TENDER	0 NO PAIN			
TAUT	1 MILD			
RASPING	2 DISCOMFORTING			
SPLITTING	3 DISTRESSING			
	4 HORRIBLE			
	5 EXCRUCIATING			



E = EXTERNAL
I = INTERNAL

COMMENTS:

FIG. 2. McGill Pain Questionnaire. The descriptors fall into four major groups: sensory, 1 to 10; affective, 11 to 15; evaluative, 16; and miscellaneous, 17 to 20. The rank value for each descriptor is based on its position in the word set. The sum of the rank values is the pain rating index (PRI). The present pain intensity (PPI) is based on a scale of 0 to 5. Copyright 1970 Ronald Melzack.

set of subclasses without at the same time losing subclasses that represented important qualitative properties.

The questionnaire, during this stage of preliminary investigation, did not have a name but was occasionally referred to as the Melzack-Torgerson questionnaire, or simply as the Pain Questionnaire. As more people became familiar with it, particularly with its use in research at McGill University, it came to be referred to in correspondence among investigators as the McGill Pain Questionnaire (MPQ). A paper describing the properties and scoring methods of the questionnaire (10) was published in 1975. It demonstrated that the questionnaire provides reliable, valid indices of pain, and that it is sufficiently sensitive to detect differences among different methods to relieve pain.

MEASURES OF PAIN EXPERIENCE

Direct Measures

Three types of measures are commonly obtained from the MPQ (10). (a) The pain rating index (PRI) based on the rank values of the words is a scoring system in which the word in each subclass implying the least pain is given a value of 1, the next word is given a value of 2, etc., and the values of the words chosen by a patient are then added up to obtain a score for each category, and a total score for all categories; (b) the number of words chosen; and (c) the PPI, the number–word combination chosen as the indicator of overall pain intensity at the time of administration of the questionnaire. In initial studies, a fourth measure was obtained: a PRI based on the scale values obtained by Melzack and Torgerson (13). However, the PRI scores obtained from rank values and from scale values were found to correlate so highly that the rank value procedure has been used almost exclusively.

Recently, an additional scoring procedure has been used. Kremer et al. (6) calculate a score for each dimension "by summing the rank order intensity value for each dimension and dividing that summated value by the total possible score on that dimension. This procedure yields values ranging from 0 to 1.0, with 0 indicating that the patient selected no words from a particular dimension to describe his pain and 1.0 indicating that the patient selected all of the highest ranked descriptors in a particular dimension to describe his pain."

Measures of Change

Each type of data represents a quantitative index of pain and can also be used to indicate the extent of change in pain quality and intensity as a result of some manipulative procedure. The questionnaire is administered before and after the procedure, and the difference can be expressed as a percentage change from the initial value. If different groups take part in a study of, for example, hypnotic training compared with a control base-line session (11), it is essential that the initial (pretreatment or precontrol) values are not significantly different for the two groups. Several problems are encountered in these computations, such as the great variability

in the subjects' initial pain scores. For example, some patients may have low PRI scores, whereas others have high scores. Are changes from the initial values comparable, for example, if 1 patient's score is reduced from 4 to 2 and another's from 30 to 15? Or, if initial scores of 4 or 30 are reduced to 0, both are counted as a 100% change, but does this provide an adequate way to compare procedures since the latter change is relatively more dramatic? Problems such as these are discussed (though not necessarily solved) by Melzack (10). In order to reduce the intersubject variability and to overcome some of the problems raised above, Hartman and Ainsworth (3) have proposed transformation of the data into a pain ratio or fraction: the "pain ratio was calculated for each session by dividing the post-session rating by the sum of the pre- and post-session ratings." They found this procedure effective in the analysis of their data.

A final form of computation may be useful, although work with it is preliminary (R. Melzack and J. D. Katz, *in preparation*). Figure 1 shows that the affective descriptors generally have higher scale values than the sensory words. Yet this information is lost by using only the rank values. Consequently, Melzack and Katz *(in preparation)* have multiplied each subclass by a constant value derived from the mean scale values for doctors and patients (13). The constants for each subclass are the following: 1 (0.69); 2 (1.38); 3 (0.93); 4 (1.59); 5 (0.81); 6 (1.19); 7 (1.28); 8 (0.70); 9 (0.72); 10 (0.94); 11 (1.74); 12 (2.22); 13 (1.87); 14 (1.32); 15 (2.33); 16 (1.01); 17 (1.22); 18 (0.81); 19 (1.0); 20 (1.15). Future research will determine if this procedure allows greater discriminability and sensitivity of the measures.

USEFULNESS OF THE MPQ

The most important requirement of a measure is that it be valid, reliable, consistent, and above all useful. The MPQ appears to meet all of these requirements (see the following chapters in sections II and III), providing a relatively rapid way of measuring subjective pain experience. When administered to a patient by reading each subclass, it can be completed in approximately 5 min. It can also be filled out by the patient in a more leisurely way as a paper-and-pencil test, although the scores are somewhat different (5).

The MPQ has now been used in many studies by investigators at McGill University (2,11,14). Recently, a study of labor pain was undertaken (12) in which it was found that (a) pain levels in labor are generally extremely high, (b) there is great variability among women, and (c) prepared childbirth training diminishes pain by statistically significant amounts, but the pain still remains at a high level, so that the title of a major book in the field—*Painless Childbirth* (7)—is obviously misleading. Although the sensitivity and usefulness of the MPQ is no longer in doubt, there is still much work to be done, and undoubtedly, changes to be made. Melzack and Torgerson pioneered in the measurement of subjective pain experience. New studies, described in the following chapters by many scientists working in several countries, indicate the scope, the problems, and the future of verbal approaches to the measurement of pain.

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2. Dubui
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3. Hartm
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4. Hebb,
5. Klepa
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6. Krem
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7. Lama
8. Livin
9. Livin
10. Melza
1:277
11. Melza
hypn
12. Melza
prepa
13. Melz
14. Veille

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