McGill Pain Questionnaire (MPQ)

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Practical Information

Instrument Name: McGill Pain Questionnaire (MPQ)

Instrument Description: The McGill Pain Questionnaire measures a patient’s subjective pain experience by using three major psychological dimensions of pain: sensory-discriminative, affective-motivational, and evaluative-cognitive. (Ref: 1,4) Structurally, the dimensions are further broken down into subclasses. The Sensory dimension includes 10 subclasses (items 1-10), the Affect dimension contains 5 subclasses (items 11-15), and the Evaluative dimension includes 1 subclass (item 16). In addition, the Miscellaneous dimension has 5 subclasses (items 17-20). The MPQ has 20 subclasses/items in all. (Ref: 4)

The MPQ is administered in 4 major parts: (1) patients mark location of their pain on a line drawing, (2) 78 pain descriptors (i.e. dull, sore, hurting, aching) are distributed across the 20 subclasses and subjects choose the appropriate descriptor from these categories (each descriptor has a rank value indicative of relative intensity of pain), (3) items to assess how the pain changes over time and what relieves or increases it; and (4) a single measure of present pain intensity (PPI). (Ref: 4)

Price:
Free for students/others in basic research; variable fee otherwise. Contact developer.

Administration Time: 15-20 minutes, however, with more experience it is completed in 5-10 minutes. (Ref: 1)

Publication Year: 1975
Item Readability: Items are appropriate for clinician-administration. Based on the items
and questions, a subject with an 8th grade reading level should be able to comprehend the scale. In accordance with Melzack’s recommendations, instructions should be read aloud to patients, who should be provided with definitions of MPQ descriptors that they do not understand. (Ref: 1,5)

The MPQ scale varies from open-ended questions to fixed response, single word options.

**Scale Format:**

**Administration Technique:** Clinician-administered. (Ref: 1)

**Scoring and Interpretation:**

Scores range from 0 to 54 on the sensory category and 0 to 17 on the affective category. Since the evaluative category has only one word group containing five words, scores can range from 0 to 5. (Ref: 6) Four quantitative scores can be obtained: 1) the Pain Rating Index, Mean Scale Values (PRI-S), based on the sum total of values for all words chosen in all categories or for individual categories (sensory, affective, evaluative); 2) Pain Rating Index, Rank Values (PRI-R), based on rank values of the descriptors, where the value of each descriptor is summed for each individual category or all categories; 3) the Number of Words Chosen (NWC) from the 78 descriptors; 4) Present Pain Intensity (PPI), a number-word combination chosen by the patient at the time of administration. The PPI is scored from 1 (mild) to 5 (excruciating). (Ref: 1)

Other researchers have proposed the use of visual analogue scales for each of the 20 classes of pain descriptors. Please see Ref: 6 for detailed information regarding this scoring method. (Ref: 6)

**Forms:**

Short Form–MPQ (15 items), Arabic, Chinese, Finnish, French, French for Canada, German (for Germany and Switzerland), Greek, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Slovak, Spanish (for Columbia, Mexico and Spain) and Swedish.

**Research Contacts**

**Instrument Developers:** Ronald Melzack, PhD

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**Instrument Developer Website:** No information found.

**Annotated Bibliography**


**Purpose:** To provide quantitative measures of clinical pain that can be treated statistically using the McGill Pain Questionnaire (MPQ).

**Sample:** Part I: N = 297 (arthritis, 27; cancer, 23; dental, 15; dermatological, 11; gastrointestinal, 10; low back and/or sciatica, 50; menstrual, 25; musculoskeletal, 46; neurological, 64; obstetric, 4; phantom limb, 17; post-surgical, 5.)

**Methods:** Part I: Patients were read the instructions out loud by a research assistant or nurse
to make sure that they fully understood the directions to select only those words that described their pain at the time the questionnaire was administered. The questionnaire was administered before and after some form of manipulative procedure. Subjects were asked to classify 102 words from the clinical literature relating to pain into smaller groups that describe different aspects of pain experience. The words were categorized into 3 major classes (sensory, affective, and evaluative) and 16 subclasses.

Part II: Groups of doctors, patients, and students were asked to assign an intensity value to each word within each subclass, using a numerical scale ranging from least (or mild) to worst (or excruciating) pain.

**Implications:** The MPQ: (1) quantifies information that can be treated statistically; (2) is adequately sensitive to detect differences among different methods to relieve pain; (3) provides information about the relative effects of a given manipulation on the sensory, affective, and evaluative dimensions of pain.


**Purpose:** To design and begin the initial evaluation of a short form-MPQ.

**Sample:** Patients’ data were obtained from Montreal General Hospital after they consented to take part in the study.

Study 1: Participants consisted of post-surgical (N = 40), obstetric (N = 20), and low back and neck-and-shoulder (N = 10) pain patients. Thirteen patients on the post-surgical wards were French-speaking and were given the French version of the SF-MPQ.

Study 2: Post-surgical (N = 31) and dental (N = 31) pain. Patients were randomly assigned an order- Long Form (LF) followed by a Short Form (SF) or vice versa-- based on a computer-generated list.

**Methods:** The standard LF-MPQ and SF-MPQ were administered to the patients in post-surgical and obstetrical wards, as well as to patients with low back and neck-and-shoulder pain in the physiotherapy department. The forms were presented to all patients with the LF followed by the SF. The patients were tested before and 30 minutes after medication or other therapy for pain. The women in labor received epidural blocks, patients in physiotherapy received TENS therapy and post-surgical patients received standard doses of narcotic and non-narcotic medication.

**Implications:** The SF-MPQ correlated very highly with the major Pain Rating Index (PRI) indices of the LF-MPQ and was sensitive to traditional clinical therapies. The sensory, affective and total scores of the SF and LF were significantly correlated. As related to pain intervention, the SF and LF MPQ demonstrated the significant effects of analgesic drugs, epidural blocks and TENS in musculoskeletal pain patients. In addition, the presentation order of the LF and SF-MPQ did not affect the significant correlation levels; they were comparably high in both orders of presentation.


**Purpose:** To examine the psychometric properties of a Spanish version of the McGill Pain Questionnaire in five Spanish-speaking countries.

http://www.hsrnd.research.va.gov/for_researchers/measurement/instrument/instrument_revi... 9/22/2008
Sample: N = 205 patients (84 with acute pain, 121 with chronic pain) from Latin America: Argentina (n = 40), Costa Rica (n = 24), Mexico (n = 96), and Panama (n = 45); Spain (n = 282) was also included.

Methods: The study was conducted in pain clinics and acute pain units of four Latin American countries. The Spanish-MPQ was administered once to all patients and again to patients from Latin American countries.

Implications: The Spanish-MPQ maintained a high internal validity when tested in various Latin American countries. The psychometric properties of the Spanish version of the MPQ suggest that the questionnaire may be used to evaluate Spanish-speaking patients.


Purpose: To assess the applicability, reliability, and validity of the MPQ (Greek version) on the sample of Greek cancer patients receiving palliative treatment.

Sample: N = 114 (58 males, 56 females). The sample consisted of Greek cancer patients; the cancer locations were gastrointestinal (31.6%), urogenital (14.9%), lung (30.7%), breast (8.8%), and other (14%). The mean age (SD) was 62.90 (10.38), range (38-82).

Methods: The study took place between November 1999 and December 2000 in the Pain Relief and Palliative Care Unit at the University of Athens. The Greek MPQ (G-MPQ) was self-administered before the initiation of the palliative treatment and then one week later. The health care professional was also available during the completion of the G-MPQ to provide any additional information or clarification. Eligibility requirements: 1) at least 18 years of age, 2) historically confirmed malignancy, 3) ability to communicate effectively with the study personnel regarding the nature of their pain, 4) adequate communication and cooperation level with the patient’s family, and 5) patient informed consent. Exclusion criteria: 1) history of drug abuse, and 2) psychiatric disorder.

Implications: During the pre-treatment assessment, the highest correlations were found between the Pain Rating Index (PRI)-Total and PRI-Sensory, and the lowest between the Number of Words Chosen (NWC) and Present Pain Intensity (PPI). During the post-treatment assessment, the highest correlations were found between the PRI-Total and the PRI-Sensory, and the lowest between the PRI-Evaluative and PPI. No significant differences were found between PPI and all the subcategories. Overall, there were statistically significant differences between the pre- and post-treatment scores for all subclasses, except for the PRI-Evaluative subscale that assessed the total experience of pain by the patient. The study indicates that the G-MPQ is a reliable and valid instrument.


Purpose: To analyze the verbal descriptor choices of a large number of low back pain patients using a method of factor extraction that minimizes distortion of the factor solution.

Sample: N = 198 (59 males, 139 females). Participants were from the back pain clinic of a university-affiliated, orthopedic hospital. Mean age: 45.2 years, range 17-80 (males) and 48.5 years, range 19-83 (females).

Methods: Patients who provided informed consent were asked to participate from May 1978-
March 1979. They were administered the MPQ by a clinical psychologist or a research assistant.

**Implications:** Four factors accounted for the majority of the variance in low back pain patients’ responses to the MPQ. Three of the factors were classified by sensory, affective, and evaluative subclasses, respectively. The patients in the current study may not be representative of the population of low back pain patients; patients treated in other settings such as rural general hospitals may not share the patients’ pain descriptor choices.


**Purpose:** Three-part study: (1) To analyze the use of the MPQ as a multi-dimensional measure of pain associated with cancer. The present findings were compared and contrasted with three similar samples with cancer pain reported in the literature (Dubuisson & Melzack, 1976; Graham, Bond, Gerkovich, & Cook, 1980; Melzack, 1975). (2) To report the development of some new scoring methods to provide a more comprehensive interpretation. (3) To re-analyze the cancer pain data in Part I using the new scoring system and suggested statistical analysis.

**Sample:** Part I: The sample consisted of 25 cancer inpatients (23 females, 2 males) at a large VA Medical Center in Long Beach, CA. The age ranged from 32 to 84 years, with a mean age of 60.1 year (SD = 11.6). Thirteen of the 25 patients were being treated with chemotherapy at the time they participated in the study; four patients were also receiving radiation therapy in addition to chemotherapy. The average length of time since diagnosis was 29.0 months (SD = 41.1). At the time of the study, 21 patients were receiving narcotic analgesics, three were receiving non-narcotic analgesics, and one received no pain medication. The present sample was compared and contrasted with the Melzack (N = 16) and Graham (N = 36) samples.

Part II: Not applicable

Part III: Same as Part I

**Methods:** Part I: The patients completed the MPQ after the medical staff had identified them as having pain problems.

Part II: Using the Visual Analogue Scale (VAS) on which the words for each class are placed along a vertical scale. The VAS computes two types of scores: Average Pain Intensity (APT) and Average Pain Intensity- Word Classes Chosen (APC). The Percentage of Words Chosen (PWC) measures the complexity of pain. To test several or all differences between the means on APT-S, APT-A, APC-S, APC-A, and the evaluative category, a two-factor randomized block factorial ANOVA design was used.

Part III: Since the VAS was not used in the data collection phase of the study; the MPQ words rank values were converted to ratings of pain intensity.

**Implications:** Scoring and analysis of the McGill Pain Questionnaire indicated that cancer pain has the highest value on the sensory dimension rather than affective dimension for the present sample of patients. No significant differences were found between the present sample and the Melzack and Graham samples on Present Pain Intensity, Sensory, Affective, Evaluative, Miscellaneous, Total, and Number of Words Chosen. A significant interaction effect is evident because of the large difference between the two measures in the affective category and no difference between them in the sensory category. The presence of this interaction indicates that the sensory pain experience is more complex than the affective pain experience.

**Purpose:** (1) To test factor composition of the Pain Rating Index (PRI) using confirmatory factory analysis, (2) to replicate the factor structure on a second population, (3) to examine the invariance of the factor structure across diverse populations, and (4) to assess the discriminant validity of the PRI subscales.

**Sample:** The groups differ in several ways: (a) homogeneity of pain complaint (Orthopedic Hospital (OH) = homogeneous, Pain Management Program, general VA hospital (PMP) = heterogeneous), (b) sex distribution (OH = 36% male, PMP = 81.4% male), and (c) type of hospital (PMP, OH).

Sample 1: N = 70 (57 males, 13 females). All patients complained of chronic pain with a mean duration of 10.7 years (range 6 months to 40.6 years) and had a mean age of 50.4.

Sample 2: N = 98 (63 females, 35 males). Mean age was 45.8 years and a mean duration of pain of 6.9 years.

**Methods:** Sample 1 patients were referred to the Pain Management Program (PMP) at the West Haven (Connecticut) Veterans Administration Medical Center. Sample 2 patients were assessed at a back pain clinic of a university-affiliated or orthopedic hospital (OH). The MPQ was administered as part of a comprehensive pain assessment in both samples; only the first 16 subclasses of the PRI were included. The Pain Rating Index (PRI) was tested by means of confirmatory factor analysis (CFA).

**Implications:** The PRI does not seem to measure the 3 separate components (sensory, affective, and evaluative) of pain for which it was originally designed. Also, the total score for the PRI appears to be the appropriate score to use due to high intercorrelations between the total and each of the 3 subscales; therefore the subscale scores contribute little beyond what is measure by the total score. The PRI does not possess adequate discriminant validity to assess the various components of pain assumed by Melzack and Casey.


**Purpose:** To study the intensity of 5 common post-operative complications: nausea, sore throat, muscle pain, headache and backache using the MPQ.

**Sample:** N = 253. There were 145 patients with nausea, 37 with headache, 36 with sore throat, 25 with backache, and 10 with muscle pain. All patients had received some form of anesthesia.

**Methods:** Exclusion criterion: could not speak English, were outpatients, short-stay patients or were too sick to participate within 24-72 hours post surgery. A research nurse selected patients- over a 3-month period-- and they were asked if they had 1 of the 5 symptoms. If they answered 'yes' the standard form of the MPQ was administered; the McGill Nausea Questionnaire was used for those claiming nausea. The Visual Present Pain Intensity (VPPI) and Mean Rating Index (MRI) were used to measure the mean number of words chosen (NWC). To test the intercorrelations between the NWC, the MRI, and the VPPI, Pearson's correlation coefficients were determined between the 3 measures for each of the 5 symptoms. A discriminant analysis for all patients was used to determine the 25 words most frequently chosen.

**Implications:** For backache and muscle pain, the scores on the NWC, VPPI and MRI were high indicating that when they occur they probably are of a moderate to high intensity and are likely
a major concern to these patients. The intercorrelations between the NWC, MRI, and the VPPI were high for 3 symptoms, moderate for one, and not statistically significant for muscle pain possibly due to the small number of patients (only 10). The MPQ and Nausea MPQ were able to determine the intensity of postoperative problems associated with anesthesia and to quantify the extent of these symptoms. The 25 most frequently chosen words would be able to distinguish between 4 pain-related problems, namely, backache, headache, sore throat and muscle pain.


**Purpose:** To examine the relationship between measures of emotional disturbance and the dimensions of the pain experience.

**Sample:** N = 102 patients (60% female). All patients were from a university hospital outpatient back clinic. The mean age was 45 years and the average duration of the back pain was 36 months.

**Methods:** The MPQ was used to quantify the pain experience and the MMPI assessed emotional disturbance. The patients completed the MPQ and MMPI after they were screened by the chief resident and accepted in the Back Clinic. There were two main phases of data analysis: (1) factor analysis to identify the primary descriptive dimensions of the pain experience and (2) ANOVA and covariance to compare various patient groupings in terms of the dimensions.

**Implications:** There was a significant relationship between signs of emotional disturbance in chronic low back pain patients and how they describe their pain experience. The findings indicate that when emotional disturbance is greater, there is a tendency for patients to describe their pain as more intense, frightening, unbearable, and burdensome. The affective dimension is related to signs of emotional disturbance independent from pain intensity description.

**Factors and Norms**

**Factor Analysis Work:**

Exploratory factor analysis, principal components method, was conducted with the verbal descriptors of the MPQ and four factors were identified: sensory pressure, evaluative, affective-sensory, and punishing affect. The 4-factor solution accounted for 51% of the total variance; each of the factors also had an Eigenvalue greater than one. The 4 factors were first rotated by direct oblique procedures and then were rotated using the varimax solution in order to determine if an orthogonal rotation was more appropriate than an oblique rotation. The oblique solution was retained. (Ref: 5)

Confirmatory factor analysis (CFA) was conducted to test the factor composition of the Pain Rating Index (PRI); CFA was conducted separately for two samples of pain patients. The three original dimensions were supported in both groups. The average correlation between factors (sensory, affective, and evaluative) was 0.71, while the average loadings within factors was 0.58. (Ref: 7)

Utilizing a sample of 102 back pain patients at a university hospital, factor analysis with orthogonal rotation and Kaiser's normalization suggested four factors: (1) sensory-affective, 19% of variance; (2) intermittent (sensory), 15% of the variance; (3) evaluative, 12% of the variance.
variance; and (4) sensory, 10% of the variance. (Ref: 9)

Finally, in a sample of Greek cancer patients, principal components analysis with varimax rotation identified two factors: "sensory, affective and evaluative" (accounted for 75% of the variance) and "miscellaneous" (accounted for 20.2% of the variance). (Ref: 4)

No information found. However, the developmental study provides mean scores and standard deviations for PPI, NWC, and PRI-R, based on a sample of 100 participants with various pain conditions (menstrual, arthritis, cancer, dental, back pain, phantom limb, post-herpetic). (Ref: 1)

Reliability Evidence
Test-retest:
Pearson r coefficients for test-retest (7 day time period) reliability ranged from 0.224 (NWC) to 0.436 (PPI). (Ref: 4)

Inter-rater:
No information found.

Internal Consistency:
The MPQ's Pain Rating Index (PRI) alpha coefficients were: sensory = 0.78, affective = 0.71, evaluative = 0.46, and the total scale = 0.84. (Ref: 7) Among a sample of Greek cancer patients (pre-palliative treatment), alpha was 0.96. With items deleted, alpha ranged from 0.95 to 0.97. (Ref: 4)

Alternate Forms:
No information found.

Validity Evidence
Construct/ Convergent/ Discriminant:
Validity was evaluated with 248 patients experiencing various types of pain. Results for scale and independent measure correlations are as follows: Pain Rating Index Scale value (PRI-S) and PRI-Rank value = 0.95, Number of Words Chosen (NWC) and PRI (S) and PRI (R) = 0.97 and 0.89, respectively; PRI and NWC-Total or PRI (R) = 0.32 (NWC-T), 0.29 (PRI-R sensory), 0.42 (PRI-R affective), 0.49 (PRI-R evaluative), 0.18 (PRI-R miscellaneous), 0.42 (PRI-R total). Correlations based on percentage change in pain scores were obtained for 29 patients experiencing various forms of pain. The correlation coefficients between Present Pain Intensity (PPI) percentage changes and the percentage changes for each of the PRI indices are: sensory, 0.90; affective, 0.82; evaluative, 0.96; miscellaneous, 0.92; total, 0.94. Significant correlation coefficients found in menstrual pain, arthritis pain, dental pain, and back pain patients between Rank Values of the PPI Total scale were: 0.40, 0.63, 0.72; 0.58 respectively. (Ref: 1)

Criterion-related/ Concurrent/ Predictive:
Researchers hypothesized that 102 back pain patients who had more signs and symptoms of emotional disturbance on the MMPI would have more extreme pain scores on the MPQ. Results follow: MMPI Hypochondrias and MPQ evaluative dimension (F=2.90, p<0.05); MMPI Hypochondrias, Depression, and Hystera and MPQ affective dimension (F=3.15, p<0.05, F=2.98, p<0.05, F=2.60, p<0.05, respectively). (Ref: 9)

Content:
Although information concerning content validity testing was not found, the development of the MPQ involved clinical literature review and input from patients, students, and physicians. (Ref: 1)

Responsiveness Evidence:
The MPQ was used to assess change in severe pain after alpha-feedback training, hypnotic training, and a combination of both. The
developmental authors reported this as net change from pre- to post-treatment. NWC scores did not show significant response to change, while both PPI and PRI-R scores showed significant (p<0.03) response to change, with the PRI-R score performing the best. (Ref: 1) In addition, MPQ scores of Greek cancer patients' pre- and post-palliative treatment showed significant changes in the PPI, NWC, PRI sensory dimension, PRI affective dimension, PRI miscellaneous, and PRI total. The PRI evaluative dimension is the only scale that did not show a significant change. (Ref: 4)

**Scale Application in VA Populations:**
Yes. (Ref: 6-7)

**Scale Application in non-VA Populations:**
Yes. (Ref: 1-5,8-9)

**VA Populations:**

**Comments**

The MPQ provides a subjective assessment of pain intensity and common features of pain. It is based on Melzack's conceptual model of pain as an experience of three dimensions: sensory-discriminative, affective-motivational, and evaluative-cognitive. The 78 pain descriptors (items) are divided amongst these three dimensions, and further divided into 20 subclasses.

Overall Usefulness for a Certain Population: The MPQ is a widely used instrument among veteran and non-veteran adult populations, both with chronic and acute pain conditions. There are many language translations available.

Advantages: The MPQ provides a multidimensional assessment of pain in a relatively brief amount of time. The MPQ appears responsive to change and may be used as a pain treatment indicator among a variety of populations.

Disadvantages: Various factor analytic studies have upheld the conceptualization of three dimensions of pain; yet, the dimensions are highly intercorrelated and suggest a lack of discriminant validity amongst the factors. (Ref: 7) Internal consistency data are limited, according to this review.

Recommendation: The MPQ is a very useful assessment of pain, built on a sound conceptual model. It has adequate evidence for validity, but only one study was found that assessed internal consistency or test-retest reliability. Therefore, more work is needed to assess its internal consistency. Given that there is evidence of inadequate discriminant ability, if the MPQ is going to be used to make treatment decisions, it is cautioned to use the total score and to perhaps supplement the MPQ with other instruments.