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REVIEW ARTICLE

Systematic review of cross-cultural adaptations of McGill Pain Questionnaire reveals a paucity of clinimetric testing

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Abstract

Objectives: The objectives of this study were to identify the available cross-cultural adaptations of the McGill Pain Questionnaire (MPQ), to describe the clinimetric testing that has occurred for each adaptation and to evaluate both the quality of the adaptation procedures and the clinimetric testing for each version.

Study Design and Setting: This study is a systematic review. Searches of the MEDLINE, EMBASE, and CINAHL databases were used to identify relevant studies. Data on the quality of the adaptation procedures and clinimetric testing were extracted using current guidelines.

Results: Forty-four different versions of the MPQ were identified representing 26 different languages/cultures. Regardless of the method of cross-cultural adaptation, clinimetric testing of the adapted questionnaires was generally poorly performed and for 18 versions no clinimetric testing has been undertaken.

Conclusions: Although the MPQ has been adapted into a large number of languages, because of inadequate testing most of the adaptations have unknown clinimetric properties. This situation means that users should be cautious when interpreting scores from adapted questionnaires.

Keywords: McGill Pain Questionnaire; Cross-cultural adaptation; Translation; Psychometric properties; Clinimetrics; Pain

1. Introduction

The McGill Pain Questionnaire (MPQ) [1] is the most widely used multidimensional instrument for measuring the quality and intensity of pain [2−5]. In its original form, the MPQ consists of 78 pain descriptors within 20 groups of words divided into four categories (sensory, affective, evaluative, and miscellaneous). Each subclass contains from two to six descriptors that have an assigned value of 1−6 reflecting the level of intensity in that subclass. In addition, the MPQ includes a five-point intensity scale. A short form of the McGill Pain Questionnaire (SF-MPQ) [6] has also been developed. It consists of 15 representative words from the sensory ($n = 11$) and affective ($n = 4$) categories of the standard long form. The five-point intensity scale and a visual analog scale are included to provide indices of overall pain intensity.

The development of the original version of the MPQ, took place in two phases: in the first phase physicians and university graduates were asked to classify 102 words obtained from the clinical literature into small groups describing different qualities of pain [7]. In the second phase of development, groups of physicians, patients, and students were asked to assign an intensity value for each word within subclasses, using a five-point numerical scale ranging from the least to the worst type of pain. A mean rating and standard deviation of each word was calculated, and the words within subclasses were ranked based on their mean ratings [1].

Because of the relevance of the original MPQ in clinical practice and research, versions of the MPQ have been developed worldwide for different language/cultural settings. The process used to develop these new versions of the MPQ has not been uniform. Some authors have used a cross-cultural adaptation approach [8] (e.g., the Turkish [9] and Korean [10] SF-MPQ), others have constructed a new questionnaire following similar methodological procedures to those used in the development of the original MPQ (e.g., the Finnish Pain Questionnaire [11] and the Italian Pain Questionnaire [12]) and some versions [13−15] have used a ''mix'' of the two procedures described above. Regardless of the approach used, the main objective of the cross-cultural adaptation is to develop equivalent versions of the MPQ that enable clinicians and researchers to assess

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What is new?

- Although MPQ has been cross-culturally adapted into 26 different languages, the clinimetric testing of these adapted versions was generally poorly performed.
- Our study shown that without proper clinimetric testing it is impossible to adequately understand the usage of the MPQ in different cultures/settings.
- The use of the most non-English versions of the MPQ should be undertaken with caution and international comparisons from studies in non-English countries remain a problem.
- Future research examining the clinimetric properties of non-English versions of the MPQ is urgently needed.

a patient's pain in their own cultural context as well as to allow comparisons of research from studies conducted in non-English speaking countries. After the revision of any type of outcome measure it is essential to test the clinimetric properties, such as internal consistency, reproducibility, validity, and responsiveness, of the new version. The clinimetric testing provides important information on the value of the new instrument to the potential user.

At present, the number and quality of cross-cultural adaptations of the MPQ are unclear. The aims of this study were to identify the available cross-cultural adaptations of the MPQ, to describe the clinimetric testing that has occurred for each adaptation and to evaluate both the quality of the adaptation procedures and the clinimetric properties for each version.

2. Methods

2.1. Study selection

To identify versions of the MPQ developed for non-English languages, two independent search strategies were carried out on MEDLINE, CINAHL, and EMBASE databases for the period from 1966 to 19/02/2009. The terms for the first search were *McGill Pain Questionnaire (plus its variations, e.g., Melzack Pain Questionnaire) AND validation OR translation OR cross-cultural adaptation OR version* and the terms of the second search were *McGill Pain Questionnaire (plus its variations) AND 50 different languages (e.g., German) or equivalent in native tongue (e.g., Deutsche)*. The results of the two searches were combined in an *Endnote X* software file. Additionally, hand searches of journals, references lists, and textbooks related to pain were performed comprehensively.

2.2. Inclusion criteria

Studies were considered eligible for inclusion if they related to cross-cultural adaptation in a specific language and were published as a full manuscript in a peer-reviewed journal. There were no language restrictions and all non-English papers were translated by accredited professionals or native speakers.

2.3. Data extraction and quality assessment

The data were extracted to describe all cross-cultural adaptation procedures (i.e., how the translation procedures were performed) and all clinimetric properties relevant to cross-cultural adaptation (i.e., reproducibility, internal consistency, responsiveness, construct validity, and ceiling/floor effects) from each adaptation. Additionally, the cross-cultural adaptation procedures were rated using the *Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures* [8]. The process of translating instruments into a new language and culture includes initial translation, synthesis, back translation, expert committee review, and pilot testing of draft translation (Table 1). The final step in the adaptation process is the assessment of the clinimetric proprieties of the new questionnaire.

The clinimetric properties were rated by the *Quality Criteria for Psychometric Properties of Health Status Questionnaire* [16] with the evaluation restricted to the subset of items relevant to cross-cultural adaptation. The original items *content validity* and *interpretability* are only relevant on the original development of a questionnaire and the item *criterion validity* is only possible to be considered when there is a gold standard available which is not the case for pain; and therefore these three items were considered not applicable for the purpose of this study. The Terwee criteria form a checklist that considers both the methodological quality of the clinimetric testing and the results from the clinimetric tests and so is somewhat different from scales used to measure the methodological quality of clinical trials [17] and therefore the criteria do not provide a single summary score because the various clinimetric properties are distinct. Instead a table is used to comprehensively describe the quality of testing and the clinimetric results (Table 2). This approach has already been used in previous systematic reviews for questionnaires for low back pain [18], vision impairments [19], and shoulder disability [20].

The data extraction and ratings were performed by the first author (L.C.M.C.) and then double-checked by an independent reviewer (L.O.P.C.). Inconsistent ratings were resolved by consensus.

3. Results

From the search strategies, 1,687 potentially relevant studies were found. From these, only 53 studies were considered eligible for data analysis (see Fig. 1).