لینک های مفید

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VALIDATION OF THE PERSIAN VERSION
OF THE BRIEF PAIN INVENTORY

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Abstract- Any pain relief program must include adequate measurement and assessment of pain. The brief pain inventory is a comprehensive instrument for pain assessment in different countries. The Persian version of the brief pain inventory (BPI-P) is the first pain related questionnaire that is validated in Iran. Aim of this study was to validate BPI-P. From October 2001 to September 2002 a total of 118 pain outpatients completed the BPI-P. Similar to the original version of the BPI, factor analysis for the Persian version showed a common factor for pain intensity and a second factor for pain-related interference with a function comparative fit index of 0.86 confirming this model. Comparing the validity and reliability of the BPI-P with the original one confirmed that the BPI-P had the appropriate psychometric data.


Key words: Brief pain inventory, pain assessment, pain intensity

INTRODUCTION

In Diagnostic and Statistical Manual of mental Disorders, 4th ed. (DSM-IV) pain disorder is classified under somatoform disorders (1). In DSM-IV it is mentioned that “the essential feature of pain disorder is pain that is the predominant focus of the clinical presentation and is of sufficient severity to warrant clinical attention (Criterion A)”.

The pain is often severe enough to impair ability to function (2, 3). Pain is a subjective sensation, and pain assessment ideally should not rely on a single question. Questionnaires for a comprehensive evaluation of pain syndromes have been developed, but patients with severe pain may not be able to use these instruments. To meet the need for an instrument to obtain estimates of pain prevalence and severity, the brief pain inventory (BPI) was developed to be easily administered to large numbers of patients (4, 5).

The brief pain questionnaire was first developed by Duat et al. (6) and then it was revised by Cleeland (5).

It was constructed as a compromise between the desire to assess as much as possible and the need to limit respondent burden. It is brief, self-administered and easily understood. The BPI contains questions on pain intensity and on pain-related interference with function. Validation of the BPI in different languages consistently demonstrated these two common factors (7, 8). In addition, the patient enters his pain localization on a body drawing and can give details of his current medication. The BPI has been validated in several languages and has become established as a standardized instrument for multinational studies (9-12). Up to now, no validated Persian version has been published. Aim of this study was to validate Persian version of the BPI (BPI-P).
MATERIALS AND METHODS

Subjects
From a total of 122 eligible patients, 118 were available for evaluation in this study. They had referred to Baqiyatallah hospital to make an appointment with us. Among the 4 excluded patients, 2 were too ill to be interviewed and 2 refused to be interviewed. Among those participated in the study who had pain disorder and were seeking treatment, 60 (51%) were female and 58 (49%) were male. They were aged from 15 to 70 years (mean, 36.5; SD, 9.82). The patients were interviewed during the period from Oct 2001 to Sep 2002 at Baqiyatallah Hospital, Tehran.

Instrument
The original version of the BPI was translated to Persian and then back to English by another translator, who had not seen the original version. This retranslated version was compared to the original, and minor modifications made. After the second retranslation, an almost complete agreement was reached. The final version was established in consultation with the translators.

Brief Pain Inventory
The BPI-P measures both pain intensity and interference of pain with the patient’s life. It also queries the patient about pain relief, pain quality, and patient perception of the cause of pain. In the BPI, 0-10 scales are used for subject ratings. These scales have demonstrated their utility across cultures (13), and are easy to understand. Eleven-point rating scales maximize the trade-off between subject’s ease of responding and increasing reliability with longer scales (14). The BPI takes only about 15 minutes to complete and results are comparable whether self administered or administered by an interviewer. The BPI was designed to be easily understood and required minimal explanation so that it could be used with large number of patients.

The pain severity items on the BPI are presented as horizontal lines of numbers, with 0 means no pain, and 10 means pain as bad as you can imagine. The BPI requires patients to rate their pain at the time of responding to the questionnaire (pain now), and also at its worst, least, and average ratings over the previous week. The ratings can also be made for the last 24 hours. The design of the study will dictate the most appropriate time period to rate. For analysis, the pain worst rating can be chosen to be the primary response variability. Alternatively, these ratings can be combined to give a composite index of pain severity (8).

The BPI also includes 7 items on which patients separately rate, using the same type of scales, how their pain interferes with enjoyment of life, activity, walking, mood, sleep, work and relations with others. These items are bounded by 0 = does not interfere and 10 = interferes completely with the other. The mean of these scores can be used as a pain interference score. Median time for completion of the BPI is 10 minutes.

Procedure
At the time of making an appointment to see a doctor, the subjects have been asked to point to the number in the pain severity and interference scale. At the time of visiting the doctor (about 7 to 10 days later), again they have been asked to point to the number in the pain severity and interference scale to assess test-retest reliability.

Statistics
Validity of the BPI was established with factor analysis, using a principal axis factor (PAF) solution with direct oblimin rotation. In assessing convergent validity correlation coefficient calculated between pain had interference of pain in their life.

Test-retest reliabilities of each of the 2 scales of BPI-P were evaluated by calculating the intraclass correlation coefficient (ICC) for ordinal measures (15, 16). ICC ≥ 0.70 were considered to support acceptable test-retest reliability (16).

RESULTS
To assess the test-retest reliability, the ICC for each item and each scale were calculated separately. The test-retest reliability was acceptable for two scales (0.89). In terms of individual items, all items were acceptable (between 0.75-0.87). Also,
Coefficient alphas were calculated separately for the four pain intensities and the seven interference items. Coefficient alphas for the pain interference and intensity shows coefficient alphas of 0.89 for the interference scale and 0.88 for the severity scale. These coefficients are comparable to other language versions of the BPI (5, 9-13). In assessing convergent validity, we found that patients with more pain had more interference of pain in their life (correlation coefficient = 0.63, \( P < 0.01 \)). Confirmatory factor analysis was primarily used to examine construct validity. This was examined by a PAF solution with direct oblimin rotation. The result of the factor loadings of the 11 items on these two factors showed that seven pain interference items and “most severe pain” item made up the first factors which were extracted.

**DISCUSSION**

Compared to other instruments, the BPI offers many advantages. It is short and simple, has been validated in several languages, and contains few descriptive words, so translation is facilitated. The McGill Pain Questionnaire (MPQ) has been translated to more languages than the BPI, but translation of the descriptive words of the MPQ is not without pitfalls (10). The BPI does not need complicated procedures for evaluation. Single items such as worst pain intensity provide valuable information that is easily accessible for the concerned physician (10). A validated Persian version of the BPI had not been available until now.

The data from our validation fit in with those of other countries. Correlation coefficients of the factors did not differ from those of other countries (5, 9-16).

Reliability of a test instrument depends not only on correlation coefficients, but also on test-retest stability. In our study, patients completed the BPI before and after consultation in our outpatient clinic, with at least 7 days between test and retest. Correlation coefficients for pain intensity and interference did not change. It may be assumed that the BPI shows sufficient reliability and validity for clinical practice.

As content validity was predefined by the original version of the BPI, we looked more closely at other aspects of validity. Construct validity was confirmed with the factor analysis, as discussed above.

We did not use the BPI for longitudinal evaluation in our study, and therefore cannot offer conclusions about the sensitivity of the BPI to changes of the analgesic or to long-term stability of the instrument. We also did not use the pain management index (PMI) in our study. This index is derived from pain severity and analgesic medication and has been proposed as a measure for the adequacy of the analgesic therapy (8, 17). The PMI can be used to measure the health care providers’ response to the patients’ pain. It has been criticized recently (10), as it is not suited to evaluate the adequacy of the analgesic therapy of individual patients. The PMI considers only the type of analgesic, but not dosage or application. As the use of the PMI has been described extensively for developed countries and in pain management units (10), we did not calculate the PMI for our patients.

In summary, validity and reliability of the Persian version of the BPI was comparable to the original version. Test-retest stability was high. Patients found the BPI easy to complete and took only a short time for completion. Further research is needed to differentiate the impact of pain-related and disease-related interference with function on the items of the BPI, and to evaluate the usefulness of the BPI for longitudinal evaluation and for patients with cognitive impairment. For clinical practice, an algorithm for the evaluation of questionnaires with missing values for single items would be useful.

**REFERENCES**

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