The Brief Pain Inventory (BPI)

Summary

**Description:** The Brief Pain Inventory (BPI), previously known as the Brief Pain Questionnaire, is a self-administered questionnaire that was originally designed to assess cancer pain. It is now also used as a generic pain questionnaire for other chronic pain conditions. It is available in a short (nine items) and long (17 items) form. The BPI short form is more frequently used and is what is referred to when the BPI is cited in research. It is the one described below.

The first, optional, item is a screening question about the respondent’s pain on the day. The questionnaire is then composed of pain drawing diagrams, four items about pain intensity (worst pain, least pain, average pain, pain right now), two items on pain relief treatment or medication, and one item on pain interference, with seven sub-items (general activity, mood, walking ability, normal walk, relations with other people, sleep, and enjoyment of life).

**Instructions for completing and scoring:** The BPI gives two main scores: a pain severity score and a pain interference score. The pain severity score is calculated from the four items about pain intensity. Each item is rated from 0, no pain, to 10, as bad as you can imagine, and contributes with the same weight to the final score, ranging from 0 to 40. The pain interference score is the sum of the items on pain interference. The seven sub-items are rated from 0, does not interfere, to 10, completely interferes, and contribute with the same weight to the final score, ranging from 0 to 70. The first item, pain drawing diagrams (painful and most painful areas) and the items on pain relief treatment or medication (list of the treatments and amount of relief) do not contribute to the scoring. It takes approximately 5 minutes to complete the BPI.

**Reliability, validity and sensitivity to change:** The clinimetric properties of the BPI described in the literature concern only the pain intensity and pain interference scores. Test-retest reliability has been assessed for malignant pain and shows good reliability for pain intensity ($r = 0.8$) and pain interference ($r = 0.8$). Internal consistency of the BPI is high for the severity scale (0.81 < $\alpha$ < 0.89) and interference scale (0.88 < $\alpha$ < 0.95).

The BPI has good construct validity on its two-factor structure: pain intensity and pain interference. However, one study suggests a three-factor model, separating pain interference into activity interference and affective interference. Concerning the criterion validity, the Spearman’s correlation coefficient between the BPI intensity and interference scales and the SF-36 Bodily Pain shows a moderate relationship (0.47 < $r$ < 0.65). The coefficient between the pain interference score and the Roland Morris Disability Questionnaire is $r = 0.57$, showing moderate correlation.

The responsiveness of the BPI has been demonstrated for people with osteoarthritis after total hip replacement with large responsiveness indices. The responsiveness indices used were the effect size (ranging from 1.57 to 1.71), the standardised response mean (ranging from 1.52 to 1.61) and the responsiveness index (ranging from 2.03 to 2.05) for change from baseline to 1 year after surgery.

Commentary

Pain is one of the most common symptoms for which patients refer to a physiotherapist. The BPI focuses on two different aspects of pain: intensity and interference. The pain intensity scale uses the 0 to 10 numerical rating scale to measure pain intensity under four different conditions. It gives a more comprehensive measure of pain intensity than would be expected if just using one measure of pain intensity. The pain interference scale has been recommended by international consensus (IMMPACT statement) as a core outcome measure of physical functioning in chronic pain clinical trials. However, it is worth noting that three of the seven interference sub-items (mood, relations with other people and enjoyment of life) measure interference in domains other than physical functioning.

In addition to measuring pain intensity and interference, the BPI captures other aspects of pain assessment (site of pain and pain treatment or medication). While these items have not been tested for their clinimetric properties, they provide physiotherapist useful information that forms part of a pain assessment.

Because the BPI is quick to answer, has demonstrated good clinimetric properties and is recommended by international consensus for chronic pain trials, it is an important tool to consider in pain assessment. The BPI is free for non-funded academic research and clinical practice, but a fee applies when used for funded academic or commercial research.


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References