Author's response to reviews

Title: Reliability and validity of the Brief Illness Perception Questionnaire for use in acute low back pain patients.

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Version: 7 Date: 11 November 2012

Author's response to reviews:

Groningen, November 11th, 2012.

Subject: Submission of revised manuscript MS: 4585530177236273.

Dear Miss Abigail Quiniquini,

Please find enclosed the revised manuscript “Reliability and validity of the Brief Illness Perception Questionnaire for use in acute low back pain patients” for publication in BMC Musculoskeletal Disorders.

We thank the reviewers for their precise and constructive criticism. We have addressed all the reviewer’s comments and your review comments. Consequently a substantial revision of the paper is performed. We think the revised manuscript is substantially improved.

All authors contributed to answering the questions of the reviewers and have given their consent for submission of this revised manuscript.

Sincerely,

Hank Hallegraeff.

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Reviewer 1

Reviewer’s report

Title: Reliability and validity of the Brief Illness Perception Questionnaire for use in acute low back pain patients.

Version: 6 Date: 6 September 2012

Reviewer: Christopher Graham

Reviewer’s report:

My initial impression of the paper was that, although quite specific in focus, it would make a meaningful contribution to the field as there are, to my knowledge, very few psychometric analyses of the Brief IPQ. However, there is a major flaw with the paper that I feel means that I cannot recommend it to be scientifically sound. There are also several minor issues.

There have been numerous interventions developed from illness perceptions research which are aimed at improving patient outcomes (Keogh et al., 2011; Petrie et al., 2002; Karamanidou et al., 2008; Broadbent et al., 2009) these are minimal (a few hours in length) and are almost exclusively based on giving information about illness. The premise being that informing the patient about their condition changes illness perceptions which in turn changes behaviour. In the present paper all participants receive an intervention - which is likely to be more substantial than simple information giving - they receive physical therapy (a new coping method/treatment). The manuscript does not make clear when this intervention is given but in the discussion (lines 181-183) concedes that this intervention was proximal enough to influence illness perceptions. If the intervention occurred between measurement points then the test-retest analysis is not a psychometric evaluation - it is an evaluation of the intervention.

Answer: To minimize treatment influence as far as possible the study protocol was clear and as a consequence we inserted in the manuscript the following
At this initial contact only anamnesis and physical examination were carried out after the data was collected. After one-week interval and before the second contact moment data of IPQ-B and SF-36 responses were again obtained. Physical therapists were instructed to avoid giving any information what might influence patients’ perception of low back pain.

If the intervention occurs quite closely before both time-points of the test re-test analysis then it is still likely to significantly influence illness perceptions as, as you know, Leventhal's SRM would infer that illness perceptions are amenable to change as someone tests out new explanations or are given new coping methods (physical therapy). Given the inferred proximal link of the intervention to the test-retest analyses the results may be seriously misleading. One would not presume illness perceptions to be stable (or at least as stable as they can be) at this time. This may be reflected in the significant change in the brief IPQ score, which is noted over one week. Of course, all patients are constantly finding new ways to cope with their illness and illness perceptions are thus likely always amenable to change meaning that test-retest at any two time-points would be influenced by this effect to some extent, however without a major intervention administered at a similar time point (as presumably occurs here) the effects of finding new ways of coping or making sense of illness would be balanced across the population.

Answer: We agree with your concern. In acute nonspecific low back pain patients in the first three weeks pain and disability are considerably declined due the natural course of this disorder. For this reason, we adjusted the study protocol in order to minimize the impact of treatment on the test results. However, the change in IPQ score can also be the result of random error due large Limits of Agreements. In the manuscript we inserted the following phrase: ‘At this initial contact only anamnesis and physical examination were carried out after the data was collected. After one-week interval and before the second contact moment data of IPQ-B and SF-36 responses were again obtained. Physical therapists were instructed to avoid giving any information what might influence patients’ perception of low back pain’.

A minor issue is that no rationale is given for the choice of measure for concurrent validity: why SF-36 mental health and not the other domains of the SF-36? In one of the tables SF-36 Vitality is included - but this is not mentioned anywhere else.

Answer: we agree with your comment. In the manuscript our rationale is added for using the SF-36 to determine concurrent validity: it is a generic health survey and can be used in different populations, treatment groups and across all ages in contrast with a disease specific instrument. In Table 3 the correlation of the SF-36 Vitality is deleted. The correlation coefficients of all the four scales of the SF-36 Mental Health component are inserted in the text. See line

Also there are no hypotheses made regarding a priori expectations of what valid
relationships between variables would look like. I refer you to the following article, Brink et al. (2011) (ICC=.70 is adequate, ICC =.80 is preferred


Answer: In psychometric testing of psychological cognitions like illness perception, reliability and validity outcomes may show lower correlations due the more complicated and multidimensional construct what is measuring. As stated in the discussion the criteria of Nunnally test-retest reliability >0.70 is recommendable in basic research however concurrent validity with the MCS is in our study less than 0.70.

Also, would the IPQ-R or other illness beliefs questionnaires be more useful for concurrent validity?

Answer: We have discussed this opportunity. However, our concern was that the IPQ-R is validated in medical diseases and not in musculoskeletal disorders. Besides, the SF-36 is a generic measure and can be used in various medical and musculoskeletal disorders including nonspecific low back pain. In contrast with a disease-specific health survey this generic health survey can be used across ages with several disorders and treatment groups.

I respect the authors’ intentions in this research, and mostly my comments would reflect minor revisions - but i fear that the test-retest analysis is likely to be misleading and thus i cannot recommend this manuscript for publication.

Level of interest: An article whose findings are important to those with closely related research interests.

Quality of written English: Needs some language corrections before being Published.

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no competing interests

Reviewer 2
Reviewer’s report
Title: Reliability and validity of the Brief Illness Perception Questionnaire for use in acute low back pain patients.

Version: 6 Date: 16 October 2012
Reviewer: Jan A. J Swinkels

Reviewer’s report:

I don’t think any revision is necessary. The article is clear and in the discussion the authors understands the practical consequences.

Level of interest: An article of importance in its field.

Quality of written English: Acceptable.

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

'I declare that I have no competing interests'

Editor’s comments

1. In the abstract I feel the correlation results from the SF-36 should be mentioned in the "result" section before appearing in the "conclusion" section.

Answer: On your advice we have included the phrase compared with the mental health subscale of the Short Form 36 Health Survey” into the results section.

2. In the second paragraph of the introduction, at the end, you say there is evidence related to changing illness perceptions in low back pain, yet the studies mentioned do not appear, on the surface, to be studies of low back pain. Can you confirm that your references are accurately applied here.

Answer: The two references are not accurately applied. The correct reference is: Reme et al 2009, We changed the reference numbers in the text and in the reference list.

3. Were there any potential participants who refused to participate? How many different recruitment centers were there? Some readers may feel uncertain about the representativeness of the sample, particularly as the recruitment, inclusion, and exclusion do not appear to be described fully.

Answer: a) There was one potential participant who met the inclusion criteria who refused to participate. b) There were two recruitment centers where the potential participants were screened by general practitioners after forwarding of these potential participants into the three physical therapy practices. c) The inclusion and exclusion criteria are described in more detail; see below.

Inclusion criteria: age 20–60 years, a new episode of acute non-specific low back (time since onset < 6 weeks) with or without radiating pain in the leg.

Exclusion criteria: specific cause of low back pain like nerve root disorders, lumbar spinal stenosis, spondylolisthesis, after injury, infection, osteoporosis,
tumour or rheumatic diseases such as M. Bechterew. See line....

4. Could you consider combining the reliability and statistics sections? Perhaps the information about the reliability interval could be moved, such as to the design section, and the information about the reliability statistics could be then moved into the statistics section.

Answer: In this revised version we moved the information about the reliability statistics into the statistics section and the information about the reliability interval is moved into the design section.

5. Please be more clear about how you intend to use the SF-36. You may find that there is a clear rationale for using more than one scale, and readers may be interested in the relations between illness perceptions and other parts of the SF-36.

Answer: A gold standard comparison representing a similar construct is not available. Broadbent et al 2008 stated that patients with a high use of mental health care are associated with negative illness perceptions. Hence, French et al, 2011 stated that the psychometric properties of the IPQ-B is not robust enough and as a consequence this study is contributing to the process of improving psychometric quality of this instrument. In line 132 - 135 we inserted the following paragraph: ‘There is no gold standard measure for the assessment of concurrent validity of the IPQ-B. Broadbent et al 2008 stated that use of mental health care is high when illness perceptions are more negative. In contrast with a disease-specific health survey this generic health survey can be used across ages with several disorders and treatment groups.

We examined the correlation of the IPQ-B with the Mental Component score (MCS) of the SF 36 consisting of the domains “mental health”, “role-emotional”, “social functioning” and “vitality”. The SF 36 Mental Component score is useful to compare correlations with other instruments measuring the same construct. Besides, this measure makes it possible to compare results across different populations, ages and treatment groups such as acute nonspecific low back pain patients.

6. It seems that illness perceptions worsen over the retest interval. Why might this be - this seems backwards if there is a process of assessment and treatment being done. Please particularly consider the reviewer’s points on this issue of retest and treatment.

Answer: We understand your concern. We adjusted the study protocol for this to minimize the impact of treatment on the test results. Initial assessment was carried out before any contact with physical therapists and the second assessment was also performed before intervention was executed. Physical therapists were instructed to avoid giving any information what might influence patients’ perception of low back pain. In the text the following phrase is inserted: ‘Patient characteristics (gender, age, height, weight) and IPQ-B and SF-36
responses were obtained in a separate room prior to each patient’s scheduled standard care service. At this initial contact only anamnesis and physical examination were carried out after the data was collected. After one-week interval and before the second contact moment data of IPQ-B and SF-36 responses were again obtained. Physical therapists were instructed to avoid giving any information what might influence patients’ perception of low back pain.

7. The sample size in this study is somewhat small. Please be upfront about this weakness and other potential weakness of the study, and please phrase your main conclusions somewhat more tentatively.

Answer: We agree with your comment. It was our intention to include as much as possible participants in the study within a one-year inclusion period and as a result, 84 patients with acute nonspecific low back pain participated. Hence, as a consequence of a small sample size the results must be interpreted with some caution. In the discussion a new phrase is inserted reflecting major limitations of the study; see line 248-254.

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Please make the following formatting changes during revision of your manuscript. Ensuring that the manuscript meets the journal’s manuscript structure will help to speed the production process if your manuscript is accepted for publication.

Please add a statement to your manuscript clarifying whether ethical approval had been obtained. Alternatively, if ethical approval was not required, this should be clearly stated.

Answer: Ethics approval was not required because a purely observational, non-interactive study was carried out without interference in standard usual care and in accordance with normal practice and approvals. Research involving tests on cognitive, diagnostic or attitude procedures does not require ethics approval when data is completely and truly anonymous, participants can’t be identified, data will not cause any damage and participants consented to the use of the data. See line….

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We would be grateful if you could address the comments in a revised manuscript and provide a cover letter giving a point-by-point response to the concerns.

Please also ensure that your revised manuscript conforms to the journal style (http://www.biomedcentral.com/info/ifora/medicine_journals ). It is important that your files are correctly formatted.