

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

ARTICLE DETAILS

TITLE (PROVISIONAL)	The Development and Exploratory Analysis of the Back Pain Attitudes Questionnaire (Back-PAQ)
AUTHORS	Darlow, Ben; Perry, Meredith; Mathieson, Fiona; Stanley, James; Melloh, Markus; Marsh, Reginald; Baxter, G.; Dowell, Anthony

VERSION 1 - REVIEW

REVIEWER	Simon Dagenais Spine Research, LLC Winchester, MA, USA Consulting and partial ownership of health insurance company involved in management of back pain and musculoskeletal conditions
REVIEW RETURNED	02-Apr-2014

GENERAL COMMENTS	<p>This manuscript presents on a multivariate analysis using principal components to identify the main factors involved with a new questionnaire intended to measure beliefs related to back pain.</p> <p>The items for this questionnaire were identified through expert opinion, the literature, prior questionnaires, and interviews with patients who had back pain, and appear valid.</p> <p>This questionnaire has the potential to offer a new screening tool for clinicians to identify patients presenting with back pain who face a poor prognosis due to potentially modifiable risk factors associated with incorrect beliefs about back pain.</p> <p>This questionnaire also creates the possibility of a patient reported outcome measure to assess the efficacy of educational interventions aimed at correcting those beliefs.</p> <p>The manuscript is well presented and the methodology appears appropriate for its objective, and is suitable for publication.</p> <p>Minor corrections to consider: Introduction: page 4 line 12: define "fear avoidance beliefs"; define "low expectations of recovery"; define "poor outcomes" line 21: how is guideline adherence measured, and why is it good? line 28: be consistent with terminology, i.e. is study about low back pain or back pain? line 30: which scale? line 37: what does disclaimer state?</p> <p>Methods:</p>
-------------------------	---

	<p>page 6 line 12: it's rather repetitive to have aims for each subsection of methods; overall study aims stated in introduction are sufficient line 23: how was qualitative analysis performed? line 42: define "research experience" line 49: were reading levels and comprehension measured? page 7 line 20: how was participation satisfaction assessed?</p> <p>Results: page 9 line 33: was analysis per gender defined a priori? line 50: delete "to", i.e. "loaded onto"</p>
--	--

REVIEWER	Poiraudau, Serge AP-HP, Université Paris Descartes, INSERM U1153 France
REVIEW RETURNED	09-Apr-2014

GENERAL COMMENTS	<p>This a clear, well-written manuscript describing the elaboration of a patient reported outcome aimed at assessing patients attitudes about back pain. The methodology used follows the recommended standards My only concern is that authors should (and could easily) provide more analysis concerning the metrics properties of the questionnaires: mainly confirmatory factor analysis and test-retest reliability.</p>
-------------------------	---

VERSION 1 – AUTHOR RESPONSE

REVIEWER 1:

Minor corrections to consider:

Introduction:

page 4

1) line 12: define "fear avoidance beliefs"; define "low expectations of recovery"; define "poor outcomes"

Response: We thank Dr Dagenais for indicating these terms are not sufficiently defined for a generalist audience.

Action taken: Text revised

Previous text: Systematic reviews have found fear avoidance beliefs and low expectations of recovery are independently associated with poor outcomes.

Revised text: Systematic reviews have found fear avoidance beliefs (movement or activity being avoided for fear of pain or injury) and low expectations of recovery (expecting a delayed return to work or persistent pain) are independently associated with poor outcomes, such as delayed return to work, activity limitation, and pain persistence

2) line 21: how is guideline adherence measured, and why is it good?

Response: The studies included in the review cited assessed guideline adherence by direct consultation observation, management recommendations related to patient vignettes, and management approaches which clinicians reported using. We feel that the readers can access the study cited (it is open access) should they wish to receive this level of detail. However, we feel that extra clarification of the aspects of guideline recommendations to which these refer may help to address Dr Dagenais' concern.

We have also added a sentence describing why guideline adherence is beneficial.

Action taken: Text revised

Previous text: Understanding the attitudes and beliefs of health professionals is also important as these are associated with both their patients' beliefs and their own guideline adherence.

Revised text: Understanding the attitudes and beliefs of health professionals is also important as these are associated with both their patients' beliefs and their own adherence to clinical guideline recommendations regarding the provision and content of patient explanations and work and activity advice.¹⁵ Guideline consistent care produces better patient outcomes and improved satisfaction at a lower cost.(Feuerstein et al. 2006, McGuirk et al. 2001)

3) line 28: be consistent with terminology, i.e. is study about low back pain or back pain?

Response: We were unable to find the term 'low back pain' on line 28. We have attempted to consistently use the term 'back pain' throughout the manuscript as this is the term used in the instrument.

We did note 'low back pain' on line 15 of the original submission and have subsequently deleted this.

We have retained the term 'low back pain' on line 43 as this refers to the aims of the PABS-PT, which did focus upon 'low back pain'.

Action taken: Text revised

'Low' deleted on line 15 (both people who have 'low' back pain, and the general public).

4) line 30: which scale?

Response: We thank Dr Dagenais for highlighting this omission.

Action taken: Text revised

Previous text: Only one of these scales specifically relates to beliefs about back pain.

Revised text: Only the Back Beliefs Questionnaire specifically relates to beliefs about back pain.

5) line 37: what does disclaimer state?

Response: Our previous text was obviously not sufficiently clear. We have revised the text to clarify that the disclaimer apologises for use of the term 'handicapped'.

Action taken: Text revised

Previous text: It also contains the term 'handicapped' which may be considered offensive; consequently, some researchers have added a disclaimer to it.

Revised text: Some researchers have also felt it necessary to append a disclaimer apologising for use of the term 'handicapped', which may be considered offensive

Methods (page 6)

6) line 12: it's rather repetitive to have aims for each subsection of methods; overall study aims stated in introduction are sufficient

Response: We have deleted these aims.

Action taken: Text deleted

7) line 23: how was qualitative analysis performed?

Response: The data were analysed using the methodology of Interpretive Description. We have added this to the text for clarity. However, we consider that should readers wish to access more detail regarding our data collection and analysis they can access this from the paper cited (it is open access).

Action taken: Text revised

Previous text: Qualitative analysis identified six broad themes

Revised text: Qualitative analysis, using the framework of Interpretive Description,(Thorne et al. 2004) identified six broad themes.

8) line 42: define "research experience"

Response: We consider that this is relatively self-explanatory. However, we have modified the wording to try and make this clearer.

We do not think it necessary to list each back pain study that each member of the research team has been associated with.

Action taken: Text revised

Previous text: All team members had back pain research experience and provided feedback on item suitability and wording.

Revised text: All team members had experience in the conduct and analysis of back pain research and provided feedback on item suitability and wording.

9) line 49: were reading levels and comprehension measured?

Response: Reading levels and comprehension had been assessed during instrument development, however, we had decided this was not necessary to include in the paper. We are happy to do so, and have inserted two sentences to describe how this was assessed and the information provided.

Action taken: Text inserted

Text readability was assessed using the Microsoft® Word® Office Package (Microsoft Corp, Redmond, WA), following the procedure described by Badarudeen and Sabharwal (2010). This provided a Flesch-Kinkaid Grade of 2.9 (indicating the text is able to be read by a 3rd grader/9 year old), and Flesch Reading Ease of 86.2% (scores from 90-100% indicate a text can be easily understood by an average 11 year old student).

Methods (page 7)

10) line 20: how was participation satisfaction assessed?

Response: We thank Dr Dagenais for highlighting that our description was not sufficient. We have added a sentence to provide more detail.

Action taken: Text revised

Previous text: Participants were generally positive about the instrument, including the response options.

Revised text: Pilot participants provided written and verbal qualitative feedback. This indicated they were generally positive about the instrument and the item response options

Results (page 9)

11) line 33: was analysis per gender defined a priori?

Response: The analysis per gender was not defined a priori. This was an exploratory analysis and the decision to analyse was made when the model did not converge when the full data set was included, nor when it was divided based upon back pain experience.

In order to clarify this we have noted that this was a post hoc analysis where this step is discussed under 'Strengths and Limitations.'

Action taken: Text revised

Previous text: The decision to split the data into male and female data sets to assist component identification

Revised text: The post hoc decision to split the data into male and female data sets to assist component identification

12) line 50: delete "to", i.e. "loaded onto"

Response: We thank Dr Dagenais for spotting this editorial over-sight.

Action taken: Text revised

Previous text: or they loaded to onto different components

Revised text: or they loaded onto different components

13) Consider shortening manuscripts slightly to avoid repetition.

Response: We have carefully reviewed the manuscript and have not identified any significant

repetition.

REVIEWER 2

1) My only concern is that authors should (and could easily) provide more analysis concerning the metrics properties of the questionnaires: mainly confirmatory factor analysis and test-retest reliability.

Response: We thank Professor Poiraudau for highlighting this limitation. We fully accept this and have acknowledged this under 'conclusions' in the abstract, 'strengths and limitations' in the article summary, and 'future research' in the discussion. We have inserted an additional sentence at the end of the 'Conclusions' to further reinforce this point.

We did not wish to increase the burden on respondents in the current study by asking them to complete the questionnaire a second time to allow analysis of test-retest reliability. We are currently in the process of gathering data to allow the analysis of these metrics with a different cohort of participants; however, these data will not be available for a period of time.

The publication of the current paper will allow other researchers an opportunity to independently analyse the test-retest reliability and perform confirmatory factor analyses related to the populations with whom they may wish to use the instrument. It may also allow use of the long form of the scale to assess population beliefs using a cross-sectional methodology, for which test-retest reliability may be of less importance.

Action taken: Text inserted (conclusion)

Further testing of the 10-item Back-PAQ's construct validity, reliability, responsiveness to change, and predictive ability needs to be conducted.