

Author's response to reviews

Title: Developing a questionnaire to identify perceived barriers for implementing the Dutch physical therapy COPD clinical practice guideline

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Author's response to reviews: see over

MS: 1556432920804798

Biomed Central
BMC Health Services Research
Att. Dr. Shaun Treweek

Reference: MS: 1556432920804798

March 29, 2013

Dear Dr. Treweek,

Thank you very much for inviting us to submit a revised version of our manuscript 'Developing a questionnaire to identify perceived barriers for implementing the Dutch physical therapy COPD clinical practice guideline (MS: 1556432920804798).

We have revised our manuscript based on the comments of the three reviewers. A point-by-point response to the reviewers is provided below. We also provided context info in the background section of the abstract as requested and included an acknowledgement section.

We hope that you will consider our revised paper for publication in BMC Health Services Research. Please let me know if you have any questions or comments.

Sincerely

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Point-by-point response to reviewers

MS: 1556432920804798

Developing a questionnaire to identify perceived barriers for implementing the Dutch physical therapy COPD clinical practice guideline

Reviewer: Anna Gagliardi

Reviewer's report:

MAJOR COMPULSORY

Results, Barriers and facilitators – elaborate on these details so the reader who does not consult the tables better understands the range of issues

We substantially expanded the results section on barriers and facilitators. The full section now reads as follows:

“Main barriers and facilitators for implementing the COPD guideline and measurement instruments are summarized in Table 4. We combined the responses ‘strongly disagree’ and ‘disagree’ as well as ‘strongly agree’ and ‘agree’, thus resulting in three response categories. The main barriers are related to time and money. Working according to the guideline would require a higher fee for service (41%), and it takes too much time to pretest (40%) and work with the COPD guideline (37%). Main facilitators are that the recommendations in the COPD guideline allow for individual decision making (83%), and for including patient preferences (80%). The participating physical therapists responded having enough skills (81%) and knowledge (80%) to apply the COPD guideline. Responses to questions about collaboration with other health care practitioners showed that the participating physical therapists felt more supported by chest physicians (43%) than general practitioners (28%) in adopting the COPD guideline. The chest physical therapists showed a positive attitude towards measurement instruments. Physical therapists (strongly) agreed with statements that measurement instruments support the diagnostic process (90%), provide additional information to clinical expertise (91%), and are important for clinical reasoning and clinical decision making (91%). Accessibility to measurement instruments (96%) is an important facilitator for using them. Full listing of the responses to each item of the questionnaire and distribution among response categories is presented in Additional file 1”

Discussion, Construct of the questionnaire – this content reads as if it belongs in the Results section

We moved the described facts to the results section and amended the text to discuss the results:

“The characteristics of the identified factors in the 5-factor solution reflect the domains guideline (applicability of the COPD guideline), provider (knowledge, skills, attitude of physical therapist), context (required investment of time & money), and patient (patient characteristics) from the questionnaire of Peters. However, the 5-factor solution resulted in only two variables loading on the fifth factor (patients), while it is recommended that at least three variables should be represented in each

common factor. In the 4-factor solution the domains time & money and patients were combined with four variables, although this factor showed an insufficient alpha for internal consistency. The small sample size of our study does not allow for clear conclusions about the best factor solution, but we considered the 5-factor solution most relevant. Patient characteristics are considered important in addressing barriers to implementation. More data are needed to determine the robustness of the identified factors.”

Discussion, Implications – elaborate on how the findings of this study help us understand how to tailor interventions and plan implementation, and what ongoing research is needed in this area

We added two paragraphs to the discussion related to (a) implementation of the COPD guideline and (b) implementation planning in general:

Ad a: “Despite the positive attitude of the participating physical therapists towards using the COPD guideline, we also noted barriers to working with the guideline especially related to external factors (resources, collaboration with general practitioners). Several factors may contribute to these barriers. One aspect is that organizational and external prerequisites may be lacking, thus limiting the feasibility for adhering to certain guideline recommendations. But these barriers may also be related to lack of specific competencies and routine of physical therapists of which they are unaware. This requires more in-depth analysis based on the results of the questionnaire and can consequently be addressed in implementation planning. The complexity of COPD care requires a multidisciplinary approach, for which quality improvement collaboratives may be of added value to address shared barriers”

Ad b: “Focus on the further development of methods for prospective identification of barriers and consequent tailoring of implementation interventions is required. The questionnaire allows for tailoring to the target group and may be used across health care professionals as basis for in-depth analysis of barriers to specific recommendations in guidelines. Efficiency and effectiveness can be enhanced by identifying specific barriers during the guideline development process. The infrastructure set up for developing the guideline can then be used for addressing key barriers by the guideline development group, using the questionnaire as well as in-depth analysis e.g. via focus group interviews. This would result in a (draft) strategy upon completion of the guideline allowing for swift progress after publication and dissemination. In addition, the identification of specific barriers during the development process will inform the guideline development group to modify the content of guidelines and to increase their usability”

MINOR ESSENTIAL

Background - move ideas in first sentence of paragraph two to the end of the first sentence and elaborate by describing evidence that therapists are not complying with guidelines and, hence, justifying that further investigation of why they are not doing so is needed.

See response below

Background – focus paragraph two on the fact that we know that guidelines are

not automatically used due to multiple barriers, and elaborate on this idea by noting that implementation strategies are needed but they need not address and cannot address all possible barriers, which is why assessment of barriers is necessary and useful

We constructed a full new paragraph to address this and the previous comment:

“Publication of guidelines does not automatically lead to their uptake and change of physical therapists’ behavior based on guideline recommendations shows room for improvement. Several studies reported multiple barriers for adherence of physical therapists to clinical guidelines and measurement instruments. Multifaceted implementation strategies are more likely to result in change of professional behavior compared to educational activities, and a comprehensive implementation strategy is essential in promoting the uptake of clinical guidelines. Such an implementation strategy should be tailored to specific barriers and facilitators. Therefore, assessment of specific barriers is important for implementation planning.”

Background – paragraph three, models have been used as frameworks for implementation planning by identifying barriers...Elaborate on methods noted (intervention mapping, behaviour change wheel) and how they are informed by models/theories and/or why these methods may be limited...elaborate with examples of interviews or questionnaires (ie. nursing BARRIERS questionnaire, organizational capacity for change questionnaires) but note that these are usually ad hoc surveys developed for specific circumstances and therefore not valid, limiting their usefulness (which further justifies the need for your research)
We elaborated on this issue in the background section by addressing the need for valid methods to identify specific barriers to be integrated in comprehensive approaches for designing implementation strategies related to the specific topic of interest.

Background – paragraph five, explain why the two questionnaires need to be combined

We have presented the final questionnaire to the participating physical therapists in two separate parts and also presented the results separately in the additional file. In our analysis we aimed at an integrated approach in assessing the barriers for implementation of the COPD guideline as well as the recommended measurement instruments. We were also interested in potential overlap in the domains of the two questionnaires. We have clarified this in the methods section.

The results showed limited overlap of items of the two parts of the questionnaires across the identified domains, supporting the presentation of the questionnaire in two parts. However, we advocate an integrated approach in the further use of the two parts of the questionnaire. Measurement instruments are core elements in guideline recommendations, and specific barriers towards the use of these instruments are important to address. We elaborated on this in the discussion.

Methods – study design, add references for Survey design and administration (ie. Dilman) and Kelley K, Clark B, Brown V, Sitzia J: Good practice in the conduct and reporting of survey research. Int J Qual Health Care 2003, 15:261-266.
We added the references

Methods – use a shorter means by which to refer to the two surveys and consistently use that terminology, for example, Peters implementation barriers and Pisters implementation attitude

We simplified the references as ‘Peters questionnaire’ and ‘Pisters questionnaire’.

Methods – Construction, explain how additional items were generated

We added information about the generation of items and revised the text as follows:

“A first draft of the questionnaire was devised by CZ and reviewed by PW. For the first part of the questionnaire, all items (n=17) of the Peters questionnaire were used and specified for the target group. Additional items for guideline implementation barriers were initially derived by two members (PW, CZ) of the research group and checked by a third researcher (EH). The items were then independently scored by three experts for relevance, and consequently approved for inclusion by the research team. We added four items from the topic list of Peters that were relevant for our target group: specificity of guideline recommendations, knowledge of physical therapists, skills of physical therapists, and required time investment for using the guideline. Since socio-economic status of patients and cultural background are considered important in patients with COPD, two related items were added to reflect these topics. Another item was added related to the attitude of physical therapists in adopting the COPD guideline. This resulted in 24 items related to implementation barriers and facilitators for the COPD guideline. The second part of the questionnaire was aimed at the attitude towards using measurement instruments as recommended in the COPD guideline, for which we used all 22 items from the Pisters questionnaire.

Methods – Construction, To assess face validity the draft questionnaire was sent to three experts who were asked to offer suggestions from improved content, wording and flow of questions.

We changed this in the manuscript.

Methods – Data collection, explain what you mean by consecutively distributed, and by consultation with network coordinators...did they distribute the survey on your behalf?

The invitation to fill out the questionnaires was sent by the researchers via email to the participating physical therapists in the networks. The email contained a hyperlink to the questionnaire and was filled out online. The network coordinators only provided the details of the participants. Individual responses were known only to the researchers. We clarified this in the manuscript as follows:

“From December 2009 to June 2010 participants in the seven regions were invited via email by the researchers with a hyperlink to the online questionnaires. Email addresses of participants were obtained via the network coordinators. The responses of the participants were collected using the Formdesk™ online form management system. Individual responses were confidentially used and known only to the researchers. The data were entered in a secured database.”

Methods – Data analysis, paragraph four – Barriers and facilitators of?...were calculated using...

We changed this into: Barriers and facilitators for the implementation of guideline recommendations and measurement instruments were calculated using descriptive statistics

Discussion – Relevance of the questionnaire, paragraph two – comment on the discrepancy between general support for the guideline yet identification of numerous barriers

See our response under major compulsory comments related to implications.

Discussion – Relevance of the questionnaire, paragraph three – elaborate on how the findings inform implementation planning

See our response under major compulsory comments related to implications.

Discussion, Methodological considerations – consider adding additional potential limitations: length of the survey which prohibited/limited responses, its format and delivery and how it was to be returned, which were not clearly described in Methods

We added the following limitations: “We did not conduct a non-response analysis and therefore have no specific information about the non-responders. Several factors may have contributed to non-responses. We used only one method for administration of the survey and people may not have felt comfortable with the online form management system. Physical therapists with a positive attitude towards guidelines may have been more inclined to fill out the survey, which could have biased our findings, in overestimating the positive attitude towards the COPD guideline.”

Reviewer's report

Reviewer: Signe Flottorp

Reviewer's report:

1. Is the question posed by the authors well defined?

Yes

2. Are the methods appropriate and well described?

Yes, as far as I can assess, but I am not an expert on the methods used for factor analysis.

3. Are the data sound?

The main limitations of the study is, as reported by the authors, the relatively low sample size of 139 participants, making the analysis less robust.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Yes, the discussion and conclusions are balanced, asking relevant questions regarding the lack of specific information to inform the development of an implementation strategy.

6. Are limitations of the work clearly stated?

Yes.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Yes

8. Do the title and abstract accurately convey what has been found?

The title is OK. The limitations of the study and the challenges of getting quite generic information which may not be particularly helpful when developing implementation strategies, are important issues discussed in the paper but missing in the abstract.

We added the following sentences to the abstract: "The results of the questionnaire alone do not provide sufficient information to inform the development of an implementation strategy. The infrastructure for developing the guideline can be used for addressing key barriers by the guideline development group, using the questionnaire as well as in-depth analysis such as focus group interviews."

Reviewer's report

Reviewer: Nadine Dougall

Reviewer's report:

Minor essential revisions

1. Abstract: results – 4-factor solution appears to be presented with 5 underlying domains (see comments later)

We linked the 5-factor solution to the 5 underlying domains and discussed aspects on the 4 vs. 5 factor solution in the discussion section.

Background:

2. It is not obvious what the compelling rationale was to have one questionnaire stemming from what appear to be two seemingly good but separate questionnaires

We have presented the final questionnaire to the participating physical therapists in two separate parts and also presented the results separately in the additional file. In our analysis we aimed at an integrated approach in assessing the barriers for implementation of the COPD guideline as well as the recommended measurement instruments. We were also interested in potential overlap in the domains of the two questionnaires. We have clarified this in the methods section.

Methods

Construction of the questionnaire:

3. The description reads that all items (n=17) were used from Peters questionnaire; however, the study design section refers to Peters being a 24 item questionnaire; brief clarity is needed if any of the original items were omitted and why. Related to this and in the same paragraph, reference is made further on to 'Four items from the original questionnaire of Peters were added...', so that it appears as though n=21 items were used from Peters with the addition of 3 other questions giving a total of 24 items. A bit more context explained here would greatly clarify this section.

We would like to thank the reviewer for pointing out the discrepancy. We added information about the generation of items and revised the text as follows:

"A first draft of the questionnaire was devised by CZ and reviewed by PW. For the first part of the questionnaire, all items (n=17) of the Peters questionnaire were used and specified for the target group. Additional items for guideline implementation barriers were initially derived by two members (PW, CZ) of the research group and checked by a third researcher (EH). The items were then independently scored by three experts for relevance, and consequently approved for inclusion by the research team. We added four items from the topic list of Peters that were relevant for our target group: specificity of guideline recommendations, knowledge of physical therapists, skills of physical therapists, and required time investment for using the guideline. Since socio-economic status of patients and cultural background are considered important in patients with COPD, two related items were added to reflect these topics. Another item was added related to the attitude of physical therapists in adopting the COPD guideline. This resulted in 24 items related to implementation barriers and facilitators for the COPD guideline. The second part of the questionnaire

was aimed at the attitude towards using measurement instruments as recommended in the COPD guideline, for which we used all 22 items from the Pisters questionnaire.

Data collection:

4. Were the questionnaires distributed by the network coordinators or by the researchers; were the questionnaires also returned via email and were there concerns about anonymity being preserved (i.e. were the individual responses known only to the researchers?).

The invitation to fill out the questionnaires was sent by the researchers via email to the participating physical therapists in the networks. The email contained a hyperlink to the questionnaire and was filled out online. The network coordinators only provided the details of the participants. Individual responses were known only to the researchers. We clarified this in the manuscript as follows:

“From December 2009 to June 2010 participants in the seven regions were invited via email by the researchers with a hyperlink to the online questionnaires. Email addresses of participants were obtained via the network coordinators. The responses of the participants were collected using the Formdesk™ online form management system. Individual responses were confidentially used and known only to the researchers. The data were entered in a secured database.”

5. What mechanisms were used for data entry?

See our response above

Results

6. Response to the questionnaire was 57%; was it possible to assess whether there any systematic bias in the respondents other than geographical region?
All participating chest physical therapists were member of regional networks with post-graduate training in COPD. The results are therefore specific for the group of chest physical therapists, but they are also the target group for the implementation of the guideline. We further emphasized this in the discussion.

We did not conduct a non-response analysis and can therefore not provide specific information about potential response bias. We added a limitation that physical therapists with a positive attitude towards guidelines may have been more inclined to fill out the survey, which could have biased our findings in overestimating the positive attitude towards the COPD guideline.

7. Factor analysis – the whole questionnaire was used for factor analysis; since the questionnaire contains 46 variables and the total number of respondents was 139 the factor analysis was an ambitious undertaking, the sample size being relatively poor for such a large questionnaire, and the conclusions stemming from this analysis must be conservative in any claims. (NB I have now come back to this section, having read the limitations of the study, and note that it is rightly discussed as a limitation. Indeed although the subject to item ratio of 5:1 is quoted, this is even viewed as a minimum and 10:1 is even used as a going minimum elsewhere.)

We agree with the reviewer about the limitations and we further emphasized the limitations: “It is recommended to use a subject to item ratio of at least 5:1 while a 10:1 ratio is considered as rule of thumb for determining a priori sample size”

Discussion

8. The 4 or 5 factor solution is unequivocal. The 4-factor loadings were selected as the best solution, however the domains quoted read as 5; the patient category either requires to be subsumed with required investment of time and money – however, with some justification why - or the 5-factor loading is indeed the better explanatory analysis (even if only two variables were available for the patient domain), it is not possible to know if the decomposition of factors is completely credible given the small sample size.

We looked again at the 4 and 5 factor solutions and considered a separate domain for patients relevant, although the small sample size of our study does not allow for clear conclusions about the best factor solution. The paragraph now reads as follows:

“The characteristics of the identified factors in the 5-factor solution reflect the domains guideline (applicability of the COPD guideline), provider (knowledge, skills, attitude of physical therapist), context (required investment of time & money), and patient (patient characteristics) from the questionnaire of Peters. However, the 5-factor solution resulted in only two variables loading on the fifth factor (patients), while it is recommended that at least three variables should be represented in each common factor. In the 4-factor solution the domains time & money and patients were combined with four variables, although this factor showed an insufficient alpha for internal consistency. The small sample size of our study does not allow for clear conclusions about the best factor solution, but we considered the 5-factor solution most relevant. Patient characteristics are considered important in addressing barriers to implementation. More data are needed to determine the robustness of the identified factors.”

9. In general terms, further clarity could be afforded with respect to what the intention was to be gained by having one questionnaire, when almost all of the two separate questionnaires appear to have been used together, with the addition or subtraction of 3 questions?

The results showed limited overlap of items of the two parts of the questionnaires across the identified domains, supporting the presentation of the questionnaire in two parts. However, we advocate an integrated approach in the further use of the two parts of the questionnaire. Measurement instruments are core elements in guideline recommendations, and specific barriers towards the use of these instruments are important to address. We elaborated on this in the discussion.

10. Appendix: Part 2 of the questionnaire has one of the columns labelled incorrectly; there are two columns headed ‘strongly agree’

We changed the heading.

Discretionary revisions – MINOR ISSUES not for publication

Suggested edits follow for improvements to the English

We complied with the suggested changes and provide brief explanations below.

Abstract:

Methods – replace ‘calculated’ to ‘assessed’ using descriptive statistics

We changed ‘calculated’ into ‘assessed’.

Background:

Throughout 'behaviour' is American English 'behavior'

We used US English spelling throughout the document and checked the manuscript for consistency

paragraph 1, last sentence: Insert 'An' before 'Important component....';

Inserted

paragraph 2 Insert 'The' before 'Focus of many....'

Inserted

Paragraph 3 suggest subsume the last two sentences, 'Barriers are typically...' and '...the most effective ways...'

Corrected

Methods:

Study design – first line change 'among' to 'amongst'; change 'divided in four domains' to 'divided into four domains'

Changed

Construction of the questionnaire – shift 'related' so as to read 'two related items were added to reflect...'

Changed

Participants:

"...with a total of 246 physical therapists were...."; should this read "with a total of 246 physical therapists, who were all approached..."

Changed

Data collection:

Change 'of' to 'with' in 'after consultation of network coordinators'.

Changed

Results:

Barriers and facilitators: A sentence is required here to stipulate what responses on the likert scale were used in summarising the data. For example, where it reads '...require a higher fee for service (41%)'; this should state that this was an aggregation of both those that agreed and those that strongly agreed. (Either that or clarify e.g. 'Agree or Strongly Agree' in table 4 headings)

We clarified this with the following sentence: "We combined the responses 'strongly disagree' and 'disagree' as well as 'strongly agree' and 'agree', thus resulting in three response categories."

Discussion:

Under methodological considerations, change 'consequent' to read 'consequently assess the....'. Then insert 'The' before 'main rationale was....'

Where is reads in para 2, '...with parallel analysis for the number of actors to retain,...' insert factors for actors.

Changed