Author's response to reviews

Title: The development of an internet-based outpatient cardiac rehabilitation intervention: a Delphi study

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Author's response to reviews: see over
Dear editor,

Please find enclosed our revised manuscript (MS: 4096803423526187) proposed for publication in *BMC Cardiovascular Disorders* titled:

**The Development of an Internet-based Outpatient Cardiac Rehabilitation Intervention: A Delphi Study**

Corneel Vandelanotte, Trudy Dwyer, Anetta Van Itallie, Christine Hanley, W. Kerry Mummery

Please find below a point-by-point response to the comments of the reviewers, which includes an overview of the changes made to the manuscript.

All the changes to the manuscript were marked with yellow highlighter.

Please note that the findings reported in this manuscript have not been previously published nor is the manuscript simultaneously submitted elsewhere. There are no conflicts of interest.

Yours sincerely,
Corneel Vandelanotte.
Referee 1

General Remarks

Outpatient rehabilitation programs are an important issue in rehabilitation services, especially dealing with patients in remote locations or rural areas. Internet-based-OCR programs are a promising approach to ensure high quality rehabilitation in those settings. The present study presents a three round Delphi study among experts to identify issues relevant for development of OCR intervention. The authors provide valuable insights and recommendations on relevant features of internet-based OCR interventions. The findings reveal information regarding further developmental approaches and design features of internet-based OCR-interventions. The manuscript is written and structured well. The manuscript does not need to be seen by a statistician.

Author response: NA

Major Compulsory Revisions

1. Method section:
“All the questions in this three round Delphi study were pre-tested among experts in the field of cardiac-rehabilitation research” – the authors should provide more information on this issue because this is essential for the development of the initial questions and therefore for the subsequent study steps

Author response:
Regarding the pre-testing of the questions six researchers in our research institute were asked to provide feedback on the questions about readability, word ordering, understand-ability, and order-effects. Based on this feedback the questions were modified and then presented to four cardiac rehab professionals at the local outpatient cardiac rehabilitation program in Rockhampton, Australia. This was followed by a second round of modifications.

The following (in bold) was added to the same sentence (page 7, first paragraph):

‘All the questions in this three round Delphi study were pre-tested among experts in the field of cardiac-rehabilitation research; feedback was sought on readability, word ordering, understand-ability and question order-effects, modifications were made when needed.’

2. Methods, First round:
“11 open ended questions” – a more precise explanation regarding the source of those questions is necessary

Author response:
Due to the specific nature of this study, the questions used in the first round were developed especially for this study. Their development was guided by best practise guidelines in cardiac rehab, as well as based on the ideas, knowledge and experience of the researchers involved in developing the Internet-based cardiac-rehab intervention. The questions were subdivided in three main categories: the patient, the support group members and the case manager.

The text of the manuscript was changed to more clearly convey that the questionnaire was developed specifically for this project. The following (in bold) was added to the second sentence of the last paragraph on page 8:

‘This questionnaire, developed specifically for this study, was asking about the opinions of cardiac rehabilitation professionals on the development of an online cardiac rehabilitation platform...’
3. Discussion, p14:
“Showed a high rate of consensus (74%) and relevance (57%)” – are there rules of thumb, conventions, or recommendations, what is considered a “high” rate of either consensus or relevance? (this relates also to the later sentence, p15, “Nevertheless, consensus on these topics was very high”)

Author response:
Although the authors are not aware of specific conventions or recommendations in relation level of consensus or relevance in Delphi studies, the interpretation of the study outcomes was reported similarly to other Delphi-studies. We would like to add to this that irrespective of any rules of thumb it will be hard to argue that for the current study the rate of consensus and relevance was not high, when considering that (using the methodology explained on page 10 of the manuscript, section ‘Data Analysis’) the highest level of consensus (IQR = 0) was reached in 74% of all questionnaire items, with all remaining items having ‘good consensus’ (IQR = 1). And that the highest level of relevance (Median = 5) was achieved in 67.4% of all questionnaire items, and that ‘good relevance’ (Median = 4) was achieved in 30.2% of all questionnaire items.

4. Limitations, p16:
Despite the representativeness of the sample, may further selection bias have occurred? (your criteria include such as previous conference visits, E-Mail access)

Author response:
We agree that further selection bias might have occurred due to recruiting among conference attendees as well as the need to have access to e-mail. However, we like to note that the ARCA conference, which we used to recruit study participants, is heavily attended by cardiac rehab experts in Australia, as well as that given the quality of the health care system in Australia very few cardiac rehab experts will be deprived from access to e-mail.

The following sentence was added to the limitations section of the manuscript on page 16:

‘Also, further selection bias might have occurred, as recruitment to be part of the study partially depended on attending a conference and having access to e-mail.’

5. Limitations, p16:
There is no discussion regarding potential disadvantages of the Delphi Technique in general; did the authors consider this in preparing the manuscript? (e.g. time consuming procedure of the technique; handling of divergent opinions or dissent estimations)

Author response:
We agree that, apart from the many advantages, there are limitations to the use of the Delphi Technique in itself. The following was added to the limitations section of the manuscript on page 16:

‘Thirdly, the use of the Delphi-method in itself has limitations: its time consuming and demanding for participants, opinions were equally weighted regardless of level of experience of the cardiac rehabilitation experts, and participants did not have the option to justify their
6. Conclusions, p16, p17:
“In many ways the experts indicated that an Internet-based ORC program should mimic a traditional face-to-face program, and emphasize the crucial role of the cardiac rehabilitation manager who interacts with patients from a distance”: you may elaborate more this conclusion due that this is a major finding of the present study

Author response:
We agree that this is a major finding of the study and that it should be given sufficient attention in the discussion, however we like to point out that a whole paragraph in the discussion (starting on page 15 and going on to page 16) addresses this matter, and that what is in the conclusion section of the discussion is summarising what has been written earlier. Therefore adding more text would lead to needless duplication. Nonetheless, we have added the following sentence to the end of the conclusion section, as we feel this is important but has not been mentioned anywhere else:

‘Within this context it will also be important to evaluate how effective cardiac rehabilitation managers are in integrating the use of an online OCR platform into their daily practice, as well as whether their need for ongoing guidance and training to use it to its full benefit.’

Minor Essential Revisions

7. p4, 2nd paragraph (citation [6])
You speak of “overwhelming evidence” and cite only one single study; is there further empirical support for this statement, any further literature?

Author response:
There certainly is further empirical support for this statement; we have added the following references to this statement in the manuscript:


8. p4:
Last line of the page, there is a point before the citations [12, 13]

Author response:
Changed!

9. p5:
“However, only a very limited number of Internet-based OCR programs have been developed and evaluated [27]” – this sentence could be more specific, that the programs were dealing with CVD Patients

Author response:
We agree and have added more information to that sentence (in bold) on the second paragraph of page 5:

"However, according to systematic review evaluating telemedicine interventions for coronary heart disease, only a very limited number of Internet-based OCR programs have been developed and evaluated [27]."

10. Methods:
The first paragraph of the method section can be shortened (the introductory part on the Delphi Technique and the main reasons for its use could be merged)

Author response:
We agree that the first paragraph of the methods section can be shortened. For readers familiar with the Delphi method the information presented at the start of the paragraph (what is a Delphi study and why would you want to use it) will be redundant. However, knowledge about the Delphi technique is not widespread and for readers unfamiliar with this research method this information will increase their understanding as to what it is we have done and how the outcomes should be interpreted. If the editor of BMC Cardiovascular Disorders, ultimately the person who has the best insight into the readership of the journal, wishes us to shorten this paragraph as well, we will do so with pleasure.

11. Table 1:
Information regarding the scale range should be provided in the table’s notes

Author response:
This information was added to the table’s notes and highlighted in yellow.

12. Heading Table 1:
Information regarding the sample size (N) is missing

Author response:
This information was added to the table’s title and highlighted in yellow.

13. p12, Numeric outcomes:
“support group members” – please explain who is mean there?

Author response:
Who the support group members are is clearly defined in the ‘Questionnaire’ paragraph (starting page 8) in the ‘First Round’ section of the Methods. No change to the manuscript was made.

14. p13, paragraph “relevance and consensus”:
The first sentence is difficult to understand;

Author response:
We agree, the first sentence in the relevance and consensus section on page 13 was reworded (below), furthermore additional references to table 1 were added throughout the ‘relevance and consensus’ section (in bold) to further increase the readability.

Very high scores for relevance and consensus were reported for items that asked about what information should be collected from the patient via the online platform (Q3 in Table 1), as well as
for items that asked about what information that should be available for the cardiac case manager using the system (Q9 in Table 1); respectively 87% and 93% of these items had and IQR of 0.

15. p13, paragraph “relevance and consensus”:
What is meant by “step count” (please provide an explanation)

Author response:
The sentence was changed, now providing more information regarding ‘step counts (in bold)’:

The only items that scored lower on relevance for these questions related to whether or not pedometer step counts (as an expression of activity levels) should be collected from patients, and whether the cardiac case manager should have the ability to interact with patients and support group members via an online forum.
Referee 2

General Remarks

The question addressed in this study is well-defined by the authors and deals with an important issue regarding the development of online cardiac rehabilitation programs to improve participation in, and access to, cardiac rehabilitation services.

In general, the methods used to collect data for this study are appropriate and well described. The tabulated data are comprehensive. The authors have adhered to relevant standards for reporting and data deposition.

The authors acknowledge previous work undertaken by others and the title and abstract accurately convey the findings of the study discussed in this manuscript.

The sections of the manuscript dealing with discussion of the findings and conclusions reached are generally well balanced and are adequately supported by the data.

However, there are a few additional limitations, as follows, which should be included in the section concerning limitations towards the end of the paper.

Subjects recruited to join the panel of experts included participants at a national conference of cardiac rehabilitation. These participants would predominantly be practitioners who were closely involved in delivering cardiac rehabilitation services themselves. One limitation is the failure to seek input from patients regarding their views as to what they would like to see in an online cardiac rehabilitation program. Their views would have strengthened the findings. It is noted that the views of the spouses and others were sought.

Another possible limitation is that the recommended information to be provided to patients appears to be more focused upon physical aspects of rehabilitation and health behaviours and less on psychosocial aspects of the recovery process. This might reflect the inclusion of more health professionals representing disciplines such as nursing, physiotherapy, exercise physiology and medicine, with lesser input from social workers, psychologists and others.

I recommend that these two additional limitations should be added to the text in the relevant area.

The writing is generally acceptable. There are several errors of punctuation and occasionally some mistakes in citing references, both in the body of the text and in the list of references at the end of the manuscript. These are listed in the attached document.

Author response:

We agree with the additional limitations mentioned by referee 2, and have added the following sentence to the limitations section of the discussion on page 16:

‘And fourthly, no input was sought from cardiac rehabilitation patients themselves, nor from professionals dealing with psychosocial aspects of the recovery process, such as...”
psychologists or social workers; their views might have strengthened the outcomes of this Delphi study.'

Minor Essential Revisions

Several punctuation spelling and other changes should be made, as indicated on the attached manuscript showing tracked changes. The manuscript should then be accepted after these minor essential revisions have been made.

Page 2, line 3 ‘Among patients who...’
Page 2, 3rd last line, ‘valuable alternative to...’
Page 4, line 8, ‘elevated risk of...’
Page 4, para 2, (OCR) not (RCR)
Page 5, 4th last line, ‘Patients who received...’
Page 8, para 2, ‘cardiac rehabilitation specialists who ...’
Page 8, para 2, ‘all data were collected...’
Page 8, delete (PRL) as it is not referred to elsewhere
Page 9, para 2, ‘independently and differences ...’
Page 9, para 3, ‘in the second round. They received ...’
Page 9, last para, ‘as in round one. However, ...’
Page 11, line 4, ‘participants who had selected...’
Page 11, line 7, Alder and Linstone - this should have a reference number
Page 11, last para, ‘52 people who ...’
Page 12, para 2, ‘during this round. In 22 of these items...’
Page 14, line 4, ‘scored higher compared to...’ (delete as)
Page 14, line 8, ‘follow best practice guidelines...’
Page 14, para 2 ‘among patients who live...’
Page 15, 5th last line, ‘patients’ general ...’

Author response:
All the changes suggested above were made and highlighted in yellow where possible.

References:

Ref 3, last word missing
Ref 5, J Women’s Health
Ref 8, Eur J Cardiovasc Prev Rehabil (remove the word ‘of’ and use correct abbreviation for that journal)
Ref 10, Women’s Health
Ref 12, Med J Aust
Ref 15, remove capitals from all but the first word
Ref 16, check accuracy of title
Ref 22, remove capitals
Ref 24, remove capitals
Ref 23, use correct abbreviation for journal
Ref 27, use correct abbreviation for journal
Ref 31, correct the citation of the journal and pages and volume
All references should be checked for accuracy of title, authors and journal abbreviations.

Author response:
All the changes suggested above were made and highlighted in yellow where possible. Further accuracy checks of the references were performed.