Author's response to reviews

Title: Stability of response characteristics of a Delphi panel: application of bootstrap data expansion

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Author's response to reviews: see over
Dear BioMed Central Editorial Team:

First and foremost, we would like to thank you for the opportunity to revise and resubmit our manuscript titled, “Stability of Response Characteristics of a Delphi Panel: Application of Bootstrap Data Expansion.” Also, we are very grateful for your effort in selecting and approaching peer reviewers for our manuscript.

We were grateful to receive the comments of the two peer reviewers. We read their notes and suggestions for revisions with great interest. In response to their comments, we have made revisions in the manuscript text, as described below.

Discretionary changes requested by Reviewer 1:

We were very gratified to receive the comments of Reviewer 1, especially given the fact that this reviewer is well renowned in the area of Delphi studies with an extensive publication record on the Delphi methodology. Reviewer 1 acknowledged the ongoing and yet unsolved discussion about the sample size in Delphi studies as an important methodological issue. We feel very fortunate to have had the opportunity to share our manuscript with this reviewer.

(1). More on pros and cons of bootstrap sampling.

In reply to this request, we have added a section titled, “Advantages and limitations of the bootstrap technique” on page 13 of the revised manuscript. This section discusses the major advantages and limitations of bootstrap data expansion as relevant to our study and to healthcare studies in general.

(2). Why one quarter of the identified qualifying experts were recruited?

In response to this question, we have added the following explanations and details:
(a) A text section titled, “Study sample size selection,” explaining the rationale for determining the sample size for our study. The sample size was based on an empirically chosen small sample size for a Delphi study, and the expected response rate, as determined from the literature. The new section is available on page 9 of the revised manuscript.

(b) A new paragraph was added to the section titled, “Selection of Delphi experts,” discussing the limitations in approaching qualified experts given the stringent Delphi panel criteria for our study. This paragraph is available at the end of page 10 and the beginning of page 11 of the revised manuscript.

**Major revision requested by Reviewer 2:**

(1). More rigorous literature review on Delphi technique to “help establish evidence that the sample in this study (n=23) is, in fact, not small by Delphi technique standards.”

We disagree with the statement of Reviewer 2 implying that there is an established standard regarding the sample size for Delphi studies. The sample size in Delphi studies has been researcher and situation specific, and more often than not, convenience samples have been chosen dependent on availability of experts and resources.

Given the lack of any Delphi sample size standards, there is confusion regarding what sample size can be considered “large” or “small” and how small a “small” sample can be. In general, the discussion around the Delphi sample size arises from the fact that there are no standards established in any methodologically acceptable way. The current literature presents only empirical choices on Delphi expert sample sizes made by individual researchers, such as convenience, purposive or criterion sampling.

Our study is important because it fills some of the gap of uncertainty in selecting the number of experts to participate in Delphi research. We explored and confirmed the stability of the Delphi outcomes obtained with a comparatively small number of Delphi experts, thus shedding some light on a long-standing problem in the methodology of Delphi studies.

The comments of Reviewer 2 clearly demonstrate the existing methodological confusion regarding the Delphi sample size, where individual researchers feel comfortable selecting an empirical number of Delphi panellists for a variety of reasons, which do not reflect a scientifically established number or agreed recommendation. Therefore, we considered that the major revision requested by Reviewer 2 presents a wonderful opportunity to demonstrate and discuss the current state of confusion around the sample size choices in Delphi studies.

In reply to the change requested by Reviewer 2, we added a separate section in the revised text titled, “Sample size in Delphi studies,” discussing the smorgasbord in panellist numbers, varying from 5 to 2,000 or more. The examples in this text section demonstrate the lack of agreement around the expert sample size and the lack of any
criteria against which a sample size choice could be judged. This new section is presented on pages 3 through 5 of the revised text.

For formatting our paper, we used the template provided in the Author’s checklist for manuscript formatting. Due to incorporating the additions requested by the reviewers, the reference list was expanded. In addition to the changes requested by the peer reviewers, sub-titles were added throughout the revised text for clarity of the text presentation.

We feel that our methodology manuscript, which partially fills an important gap in Delphi research and applies an innovative statistical method to healthcare research, will be a valued addition to the literature.

Thank you for the opportunity to submit these revisions and for your consideration for publication of our manuscript.

Yours truly,

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