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A randomized trial comparing three Delphi feedback strategies found no evidence of a difference in a setting with high initial agreement

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Abstract

Objectives: The objective of the study was to explore the impact of different feedback strategies on (1) subsequent agreement and (2) variability in Delphi studies.

Study Design and Setting: A two-round Delphi survey, with a list of outcomes generated from the results of a systematic review and interviews, was undertaken while developing a core outcomes set for prostate cancer including two stakeholder groups (health professionals and patients). Seventy-nine outcomes were scored on a scale of one (not important) to nine (critically important). Participants were randomized in round 2 to receive round 1 feedback from peers only, multiple stakeholders separately, or multiple stakeholders combined.

Results: Agreement on outcomes retained for all feedback groups was high (peer: 92%, multiple separate: 90%, multiple combined: 84%). There were no statistically significant reduction in variability for peer vs. multiple separate (0.016 [−0.035, 0.067]; $P = 0.529$), or multiple separate vs. multiple combined feedback (0.063 [−0.003, 0.129]; $P = 0.062$). Peer feedback statistically significantly reduced variability compared with multiple combined feedback (0.079 [0.001, 0.157]; $P = 0.046$).

Conclusions: We found no evidence of a difference between different feedback strategies in terms of the number of outcomes retained or reduction in variability of opinion. However, this may be explained by the high level of existing agreement in round 1. Further methodological studies nested within Delphi surveys will help clarify the best strategy.

Keywords: Consensus methods; Core outcome set development; Delphi study; RCT; Stakeholders; Feedback strategies

1. Introduction

A core outcome set (COS) is an agreed minimum set of outcomes which should be reported in all effectiveness trials of an intervention or condition [1]. Reaching consensus on the most important outcomes to measure in clinical trials for stakeholders with potentially diverse opinions, such as patients and health professionals, is central to maximizing the efficiency of clinical trials of effectiveness [2]. If there is consensus on what outcomes ought to be measured, then heterogeneity in the range of outcomes reported will reduce, selective outcome reporting will be reduced, evidence synthesis will be easier to perform, and the results are likely to be more informative. The Core Outcome Measures in Effectiveness Trials initiative has promoted methods to facilitate achieving consensus on COS [3]. A transparent way to incorporate diverse opinions and move toward consensus is to use Delphi surveys. Delphi surveys use more than one round of a questionnaire, with feedback after the first round, to elicit opinion on, for example, how important the participants think each outcome is. A strength of the Delphi method is that because the questionnaires are completed by participants anonymously and in isolation, they are not prone to social influences such as dominant personalities or pressure to conform to the majority, or to agree with perceived experts [4,5], yet still give participants an opportunity to consider and revise their own opinions in light of what other participants think. In addition, using online surveys, Delphi techniques are not limited by geography [5]. Around 30% of COS development projects listed in the Core Outcome Measures in Effectiveness Trials database incorporate Delphi methods [6].

When asking participants to rescore outcomes in the subsequent Delphi round(s), in addition to reminding the

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What is new?

Key findings

- We found no meaningful differences between the various feedback groups.

What this adds to what was known?

- Despite this, the results are not inconsistent with other exploratory research showing that multiple separate feedback benefits agreement and reduces variability. This study added a new feedback strategy (multiple combined) which has not been studied in previous research.

What is the implication and what should change now?

- Further nested research using similar methods to investigate the influence of different types of feedback will help clarify the best strategy to be used in future Delphi studies in the context of core outcome set development

participant of their own score, there are a few options available with regard to the type of feedback given. These include showing participants a summary of what their own stakeholder group's scores were (peer only), showing them a summary of the other stakeholder group's scores also (multiple separate), or showing a combined summary of all participants' scores regardless of stakeholder group (multiple combined). Furthermore, the type of data used to summarize the feedback could be a measure of central tendency, such as mean or median scores, or distributions of the number of participants choosing each score for each outcome, such as a histogram. Mean or median scores are proposed to be generally easier to understand but may also mask important divergences in opinion. Showing a distribution of scores is less succinct, and may be harder to assimilate, but gives more detailed information on diverse opinions if they exist [1].

Although there is some evidence from social psychology that different presentation of feedback between rounds may influence subsequent scores differently [4], there is no guidance on the optimal strategy as yet. Brookes et al. recently published exploratory research from three COS Delphis comparing responses of participants randomized to receive peer-only or multiple separate stakeholder feedback using mean scores from the previous round to communicate the information [7]. Their results suggested consistently and statistically significantly that multiple separate feedback increased agreement on the number of outcomes retrained by both stakeholder groups after round 2 and reduced variability between rounds compared with peer-only feedback.

In this study, we report the results of a nested randomized controlled trial (RCT) comparing peer-only, multiple separate, and multiple combined feedback. Formally investigating feedback strategy is a new methodological concept in Delphi studies used in COS development. It is still unclear which strategies might reduce the number of retained or reduce the variability and therefore we do not state directionality in the hypotheses we used.

The exploratory hypotheses tested were as follows:

1. There is a difference in the number of outcomes retained after Delphi round 2 between peer-only, multiple single and multiple combined feedback (agreement).
2. There is a difference in the variability of outcome scores after Delphi round 2 between peer-only, multiple single, and multiple combined feedback (variability).

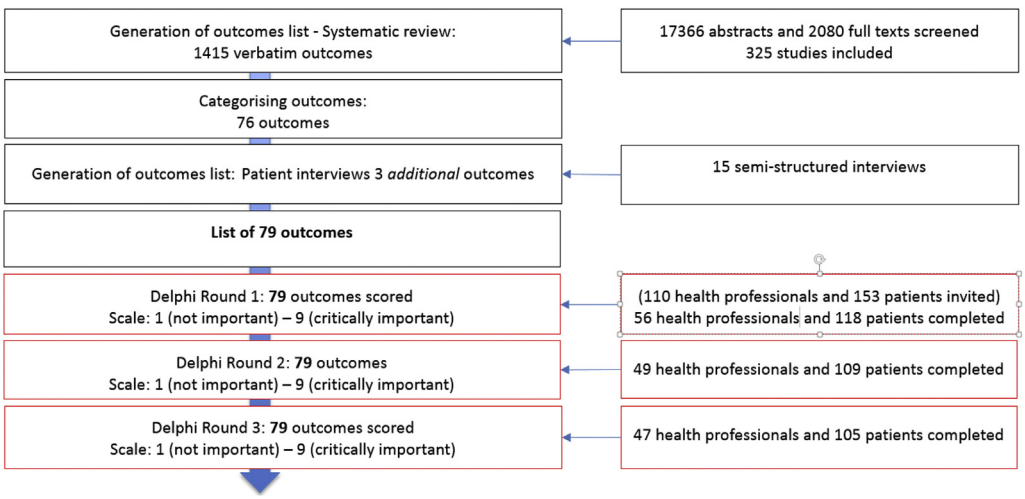

Fig. 1. Overview of Delphi creation process.