The Delphi Method

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The Delphi method, one of several consensus group methods, is a systematic process for developing and measuring consensus. It is used when a decision is required, but empirical evidence is limited or contradictory.[1] There is no requirement for a face-to-face meeting; hence, the process is particularly well suited where input is required from a large number of geographically dispersed participants. One example is medical educators using the Delphi to develop entrustable professional activities for a national specialty.[2]

The Delphi prevents undue dominance by specific individuals by providing the greatest degree of anonymity among the available methods for building consensus, but it provides less opportunity for discussion and debate, so it may not be well suited if opinions are highly polarized.[1,3] Other consensus methods, such as the nominal group technique, involve only face-to-face meetings. There have been many modifications to the Delphi, which has led to considerable confusion.[4] We recommend clear inclusion of the four key features of consensus methods and a comprehensive description and justification of the steps taken, as outlined below.[3]

DELPHI METHOD PROCESS

> 4 key features of consensus methods: **anonymity, iteration, statistical group response, controlled feedback**

STATE THE RESEARCH PROBLEM

Conduct a literature search to establish what is known on the topic in question. The literature search is essential to establish that there is limited evidence and to clearly define the research problem.
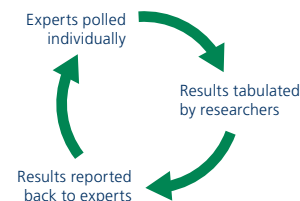
DEVELOP THE INITIAL QUESTIONNAIRE

Develop a first iteration of questionnaire items by drawing on literature findings and other resources (e.g., research team members' knowledge, focus group with experts). Describing how items were selected for inclusion in this initial questionnaire is important.

SELECT THE EXPERTS

Ensure the credibility of results by justifying the selection of experts. Why and how were these individuals selected to participate? Given that the Delphi is often conducted online, the population of experts can be quite large (> 3,000 individuals).

POLL EXPERTS ITERATIVELY

Experts polled individually → Results tabulated by researchers → Results reported back to experts

Anonymity: Experts vote anonymously online. Describing the method for maintaining anonymity is vital.

Iteration: Participants see their initial response(s) in relation to the statistical group responses and can change their response(s) during recursive rounds.

Statistical group response: Researchers report the summary of full group responses per item back to the participants.

Controlled feedback: Each participant sees his/her response(s) in relation to group responses (i.e., the number of participants selecting each response option).

IDENTIFY CONVERGENCE OF OPINION OR POINT OF DIMINISHING RETURNS

Determine the number of rounds planned or the criteria for terminating the process before engaging in the Delphi. A minimum of 2 rounds is required, but more than 4 rounds can lead to significant attrition. Define consensus a priori; 70% is suggested.[3]

REPORT THE RESULTS

Report response rates for each round and final results, including items that were added, modified, or dropped. These data may be included in the results or an appendix.

References:
1. Jones J, Hunter D. Consensus methods for medical and health services research. BMJ. 1995;311:376–380.
2. Wisman-Zwarter N, van der Schaff M, Ten Cate O, et al. Transforming the learning outcomes of anaesthesiology training into entrustable professional activities: A Delphi study. Eur J Anaesthesiol. 2016;33:1–9.
3. Humphrey-Murto S, Varpio L, Gonsalves C, Wood TJ. Using consensus group methods such as Delphi and nominal group in medical education research. Med Teach. 2017;39:14–19.
4. Humphrey-Murto S, Varpio L, Wood TJ, et al. The use of the Delphi and other consensus group methods in medical education: A review. Acad Med. 2017;92:1491–1498.

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