



Review

The use of Delphi and Nominal Group Technique in nursing education: A review



Thomas Foth^{a,*}, Nikolaos Efsthathiou^b, Brandi Vanderspank-Wright^c,
Lee-Anne Ufholz^d, Nadin Dütthorn^e, Manuel Zimansky^f,
Susan Humphrey-Murto^g

^aSchool of Nursing, Faculty of Health Sciences, University of Ottawa, 451 Smyth Road, Ottawa, Ontario, Canada K1H 8M5

^bSchool of Nursing, Institute of Clinical Science, College of Medical and Dental Sciences, University of Birmingham, United Kingdom

^cSchool of Nursing, Faculty of Health Science, University of Ottawa, Ontario, Canada

^dWolters Kluwer Health based in Ottawa, Ontario, Canada

^eMünster School of Health, Department of Health Care Education, University of Applied Science in Münster, Niedersachsen, Germany

^fDepartment of Nursing Sciences, Faculty of Health Sciences, Osnabrück University, Niedersachsen, Germany

^gThe Ottawa Hospital, Ottawa, Ontario, Canada

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ABSTRACT

Objectives: Consensus methods are used by healthcare professionals and educators within nursing education because of their presumed capacity to extract the profession's "collective knowledge" which is often considered tacit knowledge that is difficult to verbalize and to formalize. Since their emergence, consensus methods have been criticized and their rigour has been questioned. Our study focuses on the use of consensus methods in nursing education and seeks to explore how extensively consensus methods are used, the types of consensus methods employed, the purpose of the research and how standardized the application of the methods is.

Design and data sources: A systematic approach was employed to identify articles reporting the use of consensus methods in nursing education. The search strategy included keyword search in five electronic databases [Medline (Ovid), Embase (Ovid), AMED (Ovid), ERIC (Ovid) and CINAHL (EBSCO)] for the period 2004–2014. We included articles published in English, French, German and Greek discussing the use of consensus methods in nursing education or in the context of identifying competencies.

Review method: A standardized extraction form was developed using an iterative process with results from the search. General descriptors such as type of journal, nursing speciality, type of educational issue addressed, method used, geographic scope were recorded. Features reflecting methodology such as number, selection and composition of panel participants, number of rounds, response rates, definition of consensus, and feedback were recorded.

Results: 1230 articles were screened resulting in 101 included studies. The Delphi was used in 88.2% of studies. Most were reported in nursing journals (63.4%). The most common purpose to use these methods was defining competencies, curriculum development and renewal, and assessment. Remarkably, both standardization and reporting of consensus methods was noted to be generally poor. Areas where the methodology appeared weak included: preparation of the initial questionnaire; the selection and description of participants; number of rounds and number of participants remaining after each round;

* Corresponding author. Tel.: +1 613 562 5800x8435; fax: +1 613 562 5443.

E-mail address: tfoth@uottawa.ca (T. Foth).

formal feedback of group ratings; definitions of consensus and a priori definition of numbers of rounds; and modifications to the methodology.

Conclusions: The findings of this study are concerning if interpreted within the context of the structural critiques because our findings lend support to these critiques. If consensus methods should continue being used to inform best practices in nursing education, they must be rigorous in design.

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What is already known about the topic?

- Consensus group research methods are widely used in nursing research and in many other fields of research.
- Consensus group research methods derive quantitative estimates through qualitative approaches that should follow strict methodological guidelines.
- From their implementation into different fields of research since the 1950s, consensus research methods have been criticized for systematic shortfalls.

What this paper adds

- We focus on the use of consensus methods in the nursing education literature and analyze the main areas in which these methods are used.
- We discuss and support some of the critiques that question the validity of the method.
- If consensus methods are to be used to inform best education practice, they must be planned and executed rigorously.

1. Background

Consensus group methods such as the Delphi and Nominal Group Technique have been used since the 1950s as ways to collect opinions of a wide range of experts and to develop consensus between them. The Delphi technique was originally developed by the RAND Corporation in California and used as a method to identify potential key nuclear targets in the United States from an Union of Soviet Socialist Republics perspective (Campbell and Cantrill, 2001). However, the ambitions of the proponents of the Delphi technique went far beyond the political field. For authors like Helmer and Rescher from the RAND Corporation, this technique enabled scientific predictions and explanations in areas in which no empiric evidence existed. If predictions in these cases could be achieved “correctly and in a systematic and reasoned way” they had to be classified as scientific (Helmer and Rescher, 1959, 25).

Since its introduction, the Delphi technique has been used for multiple purposes. Authors differentiate between the ‘classical Delphi’ used to determine facts, the ‘policy Delphi’ used to create ideas, and the ‘decision Delphi’ used to achieve decisions (Crisp et al., 1997). Over time the Delphi technique itself has been modified and other forms of consensus seeking methods have been developed (Murphy et al., 1998). Another commonly used method is Nominal Group Technique. The so-named RAND is a hybrid of the two. What these various approaches have in common is the use of a structured method for evaluating

the degree to which experts agree about a particular issue, the assumption being that accurate and reliable assessment can best be achieved by consulting a panel of experts, and accepting group consensus (Campbell and Cantrill, 2001; Tammela, 2013). Consensus methods or techniques are supposed to derive quantitative estimates through qualitative approaches (Jones and Hunter, 1995) by using processes which are characterized by several common features including anonymity, iteration, controlled feedback, statistical group response and structured interaction (Jones and Hunter, 1995; Murphy et al., 1998).

Consensus group methods are extensively used in many fields including business as well as healthcare research including medicine, nursing, health services research, training and education (Campbell and Cantrill, 2001; Jones and Hunter, 1995; Murphy et al., 1998; Tammela, 2013). Consensus group methods are used within the context of healthcare education because of their presumed capacity to extract the profession’s “collective knowledge” which is often described as tacit knowledge that is both difficult to verbalize and to formalize (Stewart, 2001). Consensus methods help to synthesize knowledge by including information that cannot be obtained through statistical methods (Jones and Hunter, 1995) and they are thought to enable decision making especially in “grey areas” of medicine (Naylor, 1995) and nursing that are not supported by evidence gained through clinical trials or other research.

1.1. The methods – benefits and limitations: the Delphi technique

Delphi technique generally involves the following stages: identifying a research problem, completing a literature review, development of a questionnaire of statements, conducting anonymous iterative postal or email questionnaire rounds in which the experts are asked to rate or rank the statements and determining whether they agree or disagree with the statements, individual and group feedback between rounds, consensus building and summary of findings. The iterative process is continued until the greatest level of consensus is reached or a pre-determined number of rounds are completed. Participants do not meet face to face or interact directly (Boulkedid et al., 2011; Murphy et al., 1998; Sinha et al., 2011).

Benefits of the Delphi technique include the potential inclusion of large numbers of participants who are geographically dispersed and are from diverse areas of expertise (Jairath and Weinstein, 1994). Delphi technique enables academic expertise to be combined with practitioners’ perspectives and experiences (Trevelyan,

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