

Introduction & Rationale

Decision making in many areas of orthotics and prosthetics practice is not supported by objective data. Practice techniques typically rely on clinical judgment and experience, which may create variations in the quality of care and is often not adequate justification for third party payers¹.

A consensus process can be used to validate expert opinion when objective data is not available. The Delphi method is one type of consensus process that involves a multi-round survey of a panel of experts². Between each round, the survey items are modified based on the responses from the previous round, with the goal of eventually achieving a particular level of consensus on a set of items. The Delphi method is the most common consensus process used in nursing, physical therapy, occupational therapy, orthopedics, and orthotics and prosthetics³.

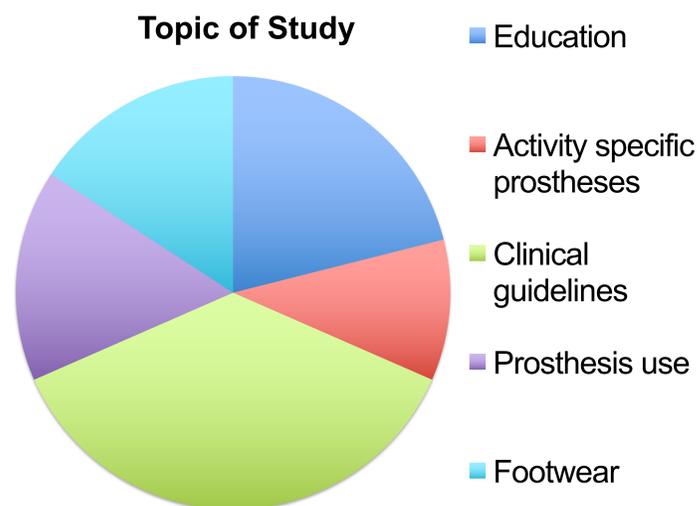
Recommendations exist for use of the Delphi process in healthcare research⁴. Most Delphi studies in orthotics and prosthetics research occurred after these recommendations were published, and it is unclear how closely these recommendations have been followed when applying this method. The aim of this review is to summarize the characteristics of Delphi processes in orthotics and prosthetics.

Methods

A review was undertaken of published reports of Delphi processes used to research some aspect of the orthotics and prosthetics profession. Study methods were analyzed to identify and characterize specific features of the application of the Delphi process. These features were compared to the recommendations for Delphi processes in healthcare research.

Results

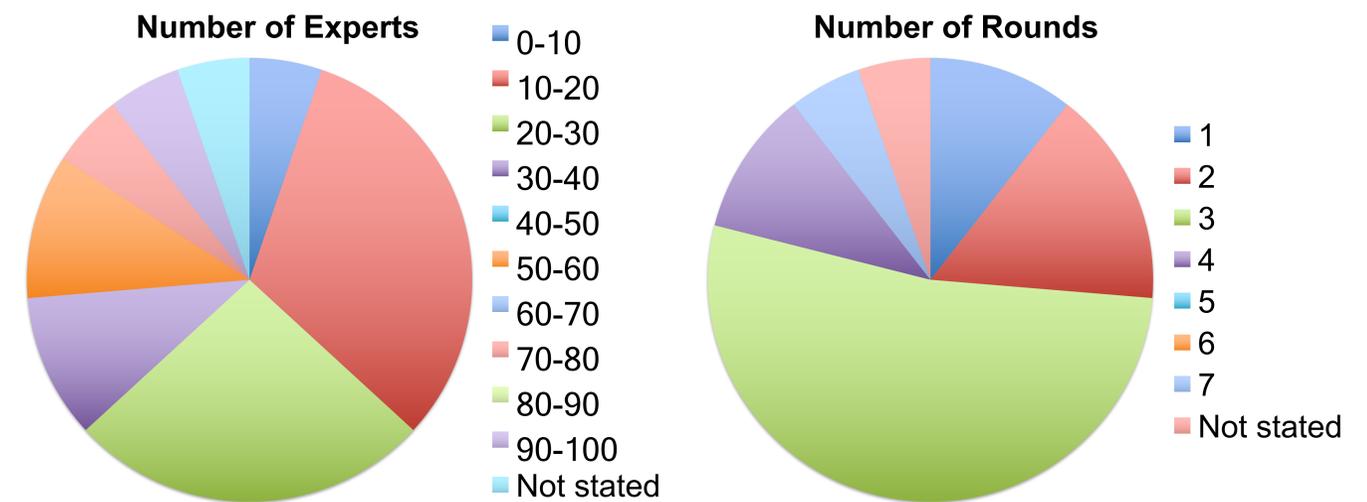
The application of the Delphi method in the reviewed studies was varied. Intervention type, qualifications and number of experts, survey item creation, number of rounds, consensus requirements, outcomes, inclusion of a final conference, dropout rate, and final output varied significantly. While a few studies closely followed the recommendations for the use of the Delphi method in healthcare, others deviated greatly.



References

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4. Keeney S, Hasson F, McKenna HP. A critical review of the Delphi technique as a research methodology for nursing. *International journal of nursing studies.* 2001 Apr 30;38(2):195-200.

Full reference list available on request to the authors at kierrafalbo@fsm.northwestern.edu.



Nineteen articles were reviewed, which addressed the following topics: Clinical guidelines (7), orthotics and prosthetics education (4), prosthesis use (3), activity-specific prostheses (2), and footwear (3). The majority of the studies (58%) surveyed a panel of 10-30 experts. Studies most commonly completed 3 rounds of the Delphi survey (53%). In order to develop the survey items prior to the first round of the Delphi process a literature review was conducted in 42% of the studies, and 32% of studies conducted interviews or surveys with experts to develop these items. No preparatory task prior to the first round of the survey was reported in 37% of the studies. All studies that indicated a required percentage of agreement for consensus reported 67-80%.

Conclusion

Because of the flexibility of the Delphi method, researchers have made recommendations regarding its application in healthcare settings⁴. Although the Delphi method is a common consensus process used in orthotics and prosthetics research³, study methods vary and do not always follow recommended guidelines. Studies that employed less than two rounds of the Delphi survey did not have the advantage of multiple iterations, and those that used more than four rounds faced lower response rates. Expert panels composed of homogeneous participants surveyed a limited range of opinions. In addition, studies with lower response rates than recommended yielded lower quality results. Guidelines for future Delphi processes in orthotics and prosthetics research can be developed based on the data collected in this review.

Significance

The Delphi method provides a way to validate decision-making in orthotics and prosthetics, where objective data is often absent. It is likely that there will be an increase in the number of Delphi studies conducted in this field in the future. Understanding the application of this method in previous studies will inform the design of future studies.