

*Systematic Reviews for Evidence-Based Practice: How to Glean Information from the Research of Your Peers.* By Sue F. Phelps & Nicole Campbell, Washington State University Vancouver

## **Systematic Review Process**

### **Step One: Formulate a Research Question**

- The question can be a hypothesis to be tested by the review or a question that the review will attempt to answer.
- The question should include who is involved, what is being studied and what material is being collected.

### **Step Two: Conduct a Thorough Search of the Literature**

- First, search the literature to see if a review has already been published on the question. You may want to update a previous review or decide another review is not in order.
- Search for original studies/articles/book chapters about the topic using established databases, searches of specific titles, and knowledgeable colleagues.
- Look at the references in the article citation lists and citation tracking for important articles
- Keep a record of the databases used, search words, limiters, and all of your searching process. This maintains transparency of the study and allows for replication.
- You can screen via titles, abstracts and subject terms in developing your initial list of citations to be evaluated using your inclusion and exclusion criteria.

### **Step Three: Inclusion and Exclusion Criteria to Choose Studies for Analysis**

- Predefining criteria addresses bias in the selection of material.
- Set criteria that address the research question.
  - Think about what would be the best evidence to address your research question.
  - The more clearly defined your inclusion and exclusion criteria the easier it will be to apply them.
- If you are not familiar with the literature on your topic you can do an initial review of ALL information, see what is published and then set criteria for your review.

### **Step Four: Data Extraction**

- A data extraction form is created using predefined elements. What do you want to know?
- Each paper is read and coded by two or more people and the information entered into a data form. The form insures conformity within the study and that the study can be reproduced.

## Step Five: Data Analysis

- The data extracted from qualitative studies without numerical data can be summarized.
- The data from quantitative studies with numerical data can be synthesized to provide one final answer to the research question.

## Systematic Reviews as a Research Methodology

### Benefits

- Useful to distil an excess of information on a specific topic
  - Meta analysis of quantitative studies increases statistical power
- Useful to bring together limited information on a specific topic
- May help to resolve discrepancies in the research
- Aids in planning new research
- Less bias than traditional reviews

### Barriers

- Time consuming
- The quality of the review is dependent on the quality of the contributing studies and the quality of the methods used in the review process.
- Publication bias can affect quality of outcomes but using unpublished data may use less rigorous techniques.

## Recommended Reading

Brettell, A. (2009). Systematic Reviews and Evidence Based Library and Information Practice. *Evidence Based Library and Information Practice*, 4(1), 43-50.

Cochrane Handbook for Systematic Reviews

<http://www.cochrane.org/training/cochrane-handbook>

Light, R. J., & Pillemer, D. B. (1984). *Summing up: The science of reviewing research*. Cambridge, MA: Harvard University Press.

McKibbin, K. A. (2006). Systematic Reviews and Librarians. *Library Trends*, 55(1), 202-215.

Petticrew, M., & Roberts, H. (2006). *Systematic Reviews in the Social Sciences*. Blackwell Publishing: Malden, MA.

## Contact us for more information

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