Systematic Reviews: an introduction

Structure of this presentation

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions

About Campbell

- A voluntary network of scholars, established 1999
- Dedicated to improving care
- The Cochrane Collaboration as a model
- Social welfare, crime and justice, education
- Online library of systematic reviews
- Annual Colloquia
- Donald T. Campbell
- The collaborative method
Part 2

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions

What is a systematic review?
Attempts to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question.

Uses explicit, systematic methods that are selected with a view to minimizing bias, thus providing more reliable findings from which conclusions can be drawn and decisions made.

Key characteristics:
- a clearly stated set of objectives with pre-defined eligibility criteria for studies;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, for example through the assessment of risk of bias; and
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies.

Source: Cochrane Handbook
Part 3

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions

Advantages

- Address knowledge gaps
- Social and education interventions have as much potential for good or harm as health interventions – or more.
- Apply the scientific method
- Handle cross cutting, complex issues through a team approach
- Organise knowledge
- Master the information tsunami.
- Accumulate knowledge – design studies to allow updating
- Investment, not consumption

Seven stages

- Formulating a problem (PICO)
- Locating and selecting studies (systematic search)
- Critical appraisal of studies
- Collecting data
- Analysing and presenting results
- Interpreting results
- Improving and updating reviews
Part 4

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. **What does it take to complete a systematic review?**
   - What are the limitations?
   - Can “qualitative” studies be summarised systematically? How?
   - Some conclusions

---

**What does it take to complete a systematic review?**

- A team
- Expertise in the topic
- Expertise in searching for studies
- Expertise in data analysis
- Guidance
- Editorial support
- External peer reviewers
- Time
- Money
Current debates on systematic reviews

- Inclusion criteria: RCT / QED / observational studies
  - There needs to be a scientific comparison
- Grading of individual studies and of reviews
  - well supported by evidence; contradicted by evidence; promising evidence; evidence is absent ...
- Economic aspects: can cost data be integrated?
- How to summarise non-empirical studies
- How to handle excluded studies

Part 5

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions

Limitations

- It takes a village
- Irrelevant?
  - Cannot address the big questions?
  - Not enough good primary research?
  - Not transferable across borders?
- Incomprehensible?
  - Recommendations: not the researcher’s job?
  - Jargon: how to demystify odds ratios and Hedges g?
  - Is there a built in problem with numbers?
The process is complex

The end is the beginning

- When the review is approved
  - Publication
  - Summaries
  - Seminars
  - Updates
Good reviews can make an impact

- Functional Family Therapy
  - Identified as effective, promoted vigorously, widely implemented with substantial public funding
- Multi-Systemic Therapy
  - Identified as effective, widely implemented, review suggests limited effectiveness. What now?
- Preventing unwanted teenage pregnancy
  - Can we identify the most promising programmes?

Part 5

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions
### On systematic reviews and qualitative studies

**Bullying example:**

622 reports identified and sorted by a scale of relevance.

89 reports of 53 different evaluations included.

---

#### Qualitative studies

Four ways in which qualitative research can contribute...

1. **Informing** reviews by using evidence from qualitative research to help define and refine the question. This ensures the review includes appropriate studies and addresses important outcomes, allowing the review to be of maximum relevance to potential users.

2. **Enhancing** reviews by synthesizing evidence from qualitative research identified whilst looking for evidence of effectiveness. Qualitative evidence associated with trials can be used to explore issues of implementation of the intervention.

3. **Extending** reviews by undertaking a search and synthesis specifically of evidence from qualitative studies to address questions directly related to the effectiveness review.

4. **Supplementing** reviews by synthesizing qualitative evidence to address questions on aspects other than effectiveness.

Cochrane Handbook, Ch. 20.2.2

---

#### Part 6

1. About the Campbell Collaboration
2. What is a systematic review?
3. What are the advantages?
4. What does it take to complete a systematic review?
5. What are the limitations?
6. Can “qualitative” studies be summarised systematically? How?
7. Some conclusions
An evidence renaissance?

- "First, more money is proposed for promoting the adoption of programs and practices that generate results backed up by strong evidence [the "top tier"]."
- "Second, for an additional group of programs with some supportive evidence but not as much, additional resources are allocated on the condition that the programs will be rigorously evaluated going forward. Over time, the Administration anticipates that some of these programs will move to the top tier, but if not their funds will be directed to other, more promising efforts."
- "Third, the approach encourages agencies to innovate and to test ideas with strong potential—ideas supported by preliminary research findings or reasonable hypotheses."