Synthesis of evidence from qualitative research

Assoc Professor William Levack PhD
Rehabilitation Teaching & Research Unit
Disclosure

I have no conflicts of interest with anything in this presentation.
What is qualitative metasynthesis?

Related terms:

• Qualitative evidence synthesis
• Qualitative meta-analysis
• Qualitative research integration
• Meta-ethnography
• Meta-study
• Meta-interpretation
• Narrative metasynthesis
What is qualitative metasynthesis?

• Pre-specific methods – justifiable, transparent, auditable

• A process of systematic identification, examination, comparison and interpretation of findings from published qualitative research

• NOT simply a narrative review of qual. research (interpretation rather than aggregation)

(Sandelowski and Barroso, 2007)

Note: Cochrane includes “meta-aggregation” and “meta-summary” in their description of methods for “qualitative evidence synthesis”
Review process

Question
Inclusion criteria
Search strategy
Critical appraisal

Data extraction
Data synthesis

Qualitative Reviews:

→ Pop^n, phenon. of interest
→ Operationalised from question
→ Explicit; 2X indep screening
→ Maximising trustworthiness; less established
→ Interpretive; often inductive
→ Interpretive
Sensitivity analysis

1. Categorise all included studies:
   - KP – Key paper
   - SP – Satisfactory paper
   - UR – Unclear relevance
   - FF – Fatally flawed

2. Conduct analysis with all (non-FF) papers

3. Then evaluate impact of UR (and SP?) on overall emphasis in findings

(Dixon-Woods et al. 2007)
CerQual

• A new approach for assessing how much certainty (or confidence) to place in the findings of qualitative evidence syntheses.

• Certainty = the extent to which the review finding is trustworthy or valid

• Combined two evaluations:
  1. Critical appraisal
  2. Coherence of review findings (the extent to which a clear pattern can be identified across study data – e.g. consistent across multiple contexts; explains multiple variations across studies)
Benefits of qual. data

- Exploring concepts not easily measured
- Examination of lived experiences (e.g. what matters; how people make sense of health and disability experiences)
- Generation of new ideas, theories, typologies or classifications
- Contributing to practical significance of quant. research
Benefits of systematic methods

- Comprehensive identification of all studies on a given topic
- Development of fresh interpretations
- Broadening the relevance of findings from single studies; addressing issues of generalisability
Potential value: Workplace-based return-to-work interventions

- A review of both quant and qual research

- Quant data: ‘Our research team was struck by the limited details provided about the interventions offered’ (Franche et al., 2005, p. 627).

- Qual data: supplemented understanding the mechanisms of effective interventions (MacEachen et al., 2006)
Potential value: Workplace-based return-to-work interventions

- e.g. **Quant** data:
  - early contact with worker $\rightarrow$ reduced work disability duration, reduced cost of disability

- e.g. **Qual** data:
  - What ‘counts’ as early contact
  - How early contact influences improved outcome
  - When early contact is detrimental
  - Importance of non-measurable factors: e.g. ‘good will’ between workers, work place and insurer

(Franche et al. 2004)
Experience of recovery and outcome following traumatic brain injury: a metasynthesis of qualitative research

WILLIAM M. M. LEVACK1, NICOLA M. KAYES2 & JOANNA K. FADYL2

1Rehabilitation Teaching and Research Unit, University of Otago, Wellington, New Zealand and 2Health and Rehabilitation Research Institute, School of Rehabilitation and Occupation Studies, AUT University, New Zealand

Abstract

Purpose. To explore the use of qualitative metasynthesis to inform debate on the selection of outcome measures for evaluation of services provided to adults with traumatic brain injury (TBI).

Method. Fifteen databases were searched for qualitative research published between 1965 and June 2009, investigating the lived experience of recovery following TBI acquired during adulthood. Two reviewers independently screened all abstracts. Included studies were evaluated using methodological criteria to provide a context for interpretation of substantive findings.
Potential value: Measuring what matters in TBI rehabilitation

Leading to... development of a new measure
Brain Injury Sense of Self Scale (BISoSS)

The following questionnaire asks for information about how you view yourself, how other people treat you, and how you view your place in the world.

Please answer all questions. There are no right or wrong answers.

Please answer the questions thinking about how you have been feeling most of the time over the last 7 days.

Put a cross in the circle to indicate how strongly you agree or disagree with each statement below. Choose agree or strongly agree if you think the statement really applies to you and disagree or strongly disagree if the statement does not apply to you.

For example:

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

1. I have a clear idea of who I am
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree

2. I feel in control of my actions
   - Strongly agree
   - Agree
   - Disagree
   - Strongly disagree

Strongly
Cochrane Qualitative & Implementation Methods Group

Our focus is on methods and processes involved in the synthesis of qualitative evidence and the integration of qualitative evidence with Cochrane intervention reviews of effects. Our purpose is to advise Cochrane and its network of researchers, editors, and authors on methods and processes that can be used to support the synthesis of qualitative evidence.
Qualitative metasynthesis in Cochrane

- First qual. review in Cochrane published 2013

- All qual. reviews have to be associated with a quant review on effectiveness
- CQIMG Report 2015-2016: Cochrane published 6 reviews (+ 12 protocols)
- Guidelines added to Cochrane Handbook
- Developing methods for evaluation for certainty of findings: CerQual
Conclusion

- Reviews of qualitative research have much to offer PRM, particularly:
  - Understanding participant/patient experiences
  - Explaining mechanisms of effect and reasons for variance
  - Evaluating hard-to-measure consequences of intervention
- Fairly new to Cochrane, but growing
Other references of interest


Challenges
For rehabilitation in development of best practice evidence and how to address them
Assoc. Professor William Levack PhD
Rehabilitation Teaching & Research Unit
Disclosure

I have no conflicts of interest with anything in this presentation.
“to put Cochrane evidence at the heart of health decision-making all over the world”

Producing the evidence:

• Coverage is defined by the needs of end users…
• … continue to develop innovative methods for designing and conducting research evidence synthesis
Cochrane Reviews on TBI interventions

Scoping of reviews (Feb 2017):

• 25 reviews and protocols
  ➢ 13 exclusive to TBI (9 reviews; 4 protocol)
  ➢ 12 mixed brain injury, incl. stroke (10 reviews; 2 protocol)
• 9/25 reviews or protocols over 5 years out of date
• Meta-analysis attempted in only 6 reviews (incl. only 2 TBI exclusive reviews)
• Majority concluded “insufficient evidence”
GRADE the evidence

- Risk of bias (randomisation; group allocation; ITT; other)
- Directness of evidence
- Heterogeneity
- Precision of effect estimates
- Risk of publication bias
Risk of bias

- Randomisation → Ethical and pragmatic problems of not delivering intervention
- Rehabilitation interventions usually require active involvement of patients and personnel → But blinding not possible
- Patient reported outcome measures important → But blinding not possible
- Incomplete out data → Problem with attrition in long term, community-based studies
Hetereogenity & precision of effect estimates

- Rehabilitation trials often have high heterogeneity in terms of:
  - Patient population
  - Person-centred interventions
  - Health-care context
  - Socioeconomic context
  - ‘Quality’ of the therapist on effects of intervention

... All of which reduce precision of effect estimates
Other barriers to RCTs in rehabilitation

• Most rehab interventions are complex (Craig et al., 2008)
  ➢ Multiple interacting components
  ➢ Behaviour challenge elements
  ➢ Individualisation of interventions
    (i.e. the ‘black box’ of rehabilitation)
Other barriers to RCTs in rehabilitation

• Most rehab interventions are complex (Craig et al., 2008)
  … requiring many multiple RCTs to investigate ($$$ and time!)
  … problems with intervention fidelity
  … problems with selecting a comparison group
    (no treatment; ‘usual care’; attention control?)
Other barriers to RCTs in rehabilitation

• Sample sizes for less common conditions
  e.g. multiple sclerosis; motor neuron disease; severe TBI
But... don’t throw the baby out with the bathwater

Evidence-based rehabilitation

Rehabilitation professions

Things that are problematic for rehabilitation research

Cochrane
So… where to from here?

What work needs to happen now to make Cochrane relevant to rehabilitation?
Cochrane Rehabilitation Methodology Committee

Chair: Dr. Antti Malmivaara (Finland)
Co-Chair: Prof. Thorsten Meyer (Germany)
Information gathering!

An international survey of prioritise and expertise:

http://tinyurl.com/lfxd8w6

Contribute your ideas!
Proposed activities

• Review how Cochrane methods have been applied to rehab topics
  – How PICO has been applied
  – How risk of bias has been managed
  – How heterogeneity has been managed

• Collect and summarize publications on review methods for evidence based practice relevant to rehabilitation

• Investigate methods used in non-Cochrane reviews on rehabilitation topics
Proposed activities

• Assess relevance of Cochrane reviews on rehab topics

• Investigate the relevance of Cochrane reviews and methods, incl. priorities of review questions to low or middle income countries

• Investigate and develop methods for critical appraisal & evidence synthesis involving non-RCT designs (e.g. single case series; bench-mark controlled trials)
Contributions welcome!

• A lot to be done!
• Join Cochrane Rehabilitation mailing list: cochrane.rehabilitation@gmail.com
• Contribute to our current survey:

http://tinyurl.com/lfxd8w6