

How can systematic reviews incorporate
qualitative research? Approaches to
question formulation, searching, synthesis
and appraisal

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How can reviews accommodate diversity of primary evidence?

- Crucially linked to the *nature of the research question*
 - And to the *aim of the review*
 - Review questions are of different types and demand different forms of answers
 - Review methods need to be matched to the type of questions
 - Broadly, review methods are either *interpretive* or *integrative*, though most contain elements of both
 - Many published reviews currently do not adequately match questions & methods
- Dixon-Woods M, Bonas S, Booth A, Jones DR, Miller T, Shaw RL, Smith J, Sutton A, Young B. (2006) How can systematic reviews incorporate qualitative research? A critical perspective. *Qualitative Research* 6: 27-44

Systematic reviews

- Conventionally understood to be characterised by:
 - An explicit study protocol
 - Pre-specified, highly focused question
 - Explicit methods for searching
 - Explicit methods for appraisal
 - Explicit methods for synthesis of studies

Systematic reviews

- Advantages seen to lie in rigour and transparency of process
- Legitimated through appeal to the fallibility of informal reviews
- Weakness of informal review seen to derive from failures in procedural specification and tendency of reviewer to
 - Construct idiosyncratic theories and marshal evidence in support of these
 - Be chaotic or negligent in identifying and assessing relevant evidence

The standard critique

- SRs fail to recognise the contingencies and fuzzy realities of practice and experience
- SRs tend to answer answerable question rather than useful question
- Counts the things that can be measured, rather than (all) the things that are important
- Too much affinity with controlling agendas of managers and policy-makers

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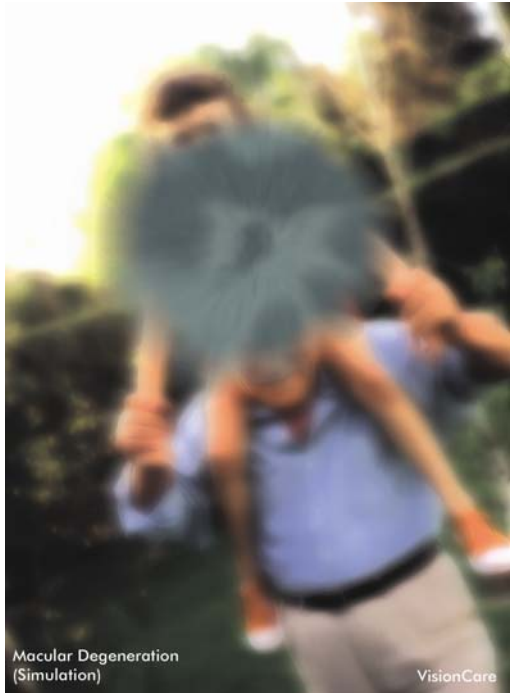
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But this critique is often based on a caricature

And may only apply in certain situations

Systematic reviews are excellent

- In addressing questions where you want to know “what works?”
- And the “whats” and how they work can be measured



Macular Degeneration
(Simulation)

VisionCare



Photodynamic therapy with verteporfin is more effective than placebo in terms of the primary outcome (loss of 15 letters or more of visual acuity) and it is very unlikely that this result is a chance finding....the benefits seem to outweigh the harms so that PDT with verteporfin is effective overall in slowing the rate of vision loss. (Meads C, Hyde C (2004) Photodynamic therapy is effective, but how big is the effect? Results of a systematic review. British Journal of Ophthalmology 88: 212-217

Conventional systematic review

- Is a very good thing
- But only when used for the right questions
- Many of the criticisms apply only when it is inappropriately used for the wrong questions
- Or when it is valorised as the only legitimate way of doing any review

Sources of frustration with SRs

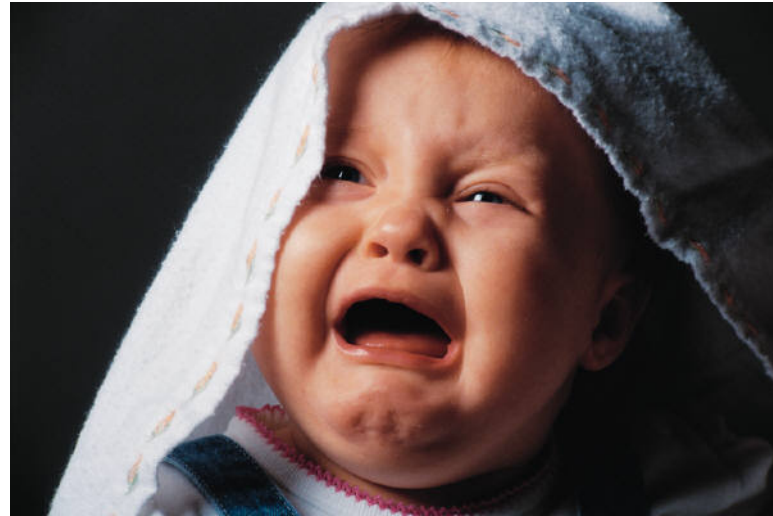
- Tendency to see systematic reviews as the only authoritative source of “the evidence”
- Proceduralisation of review processes very appropriate and necessary for some types of question – not others
- Scientific credibility seen to derive from displays of compliance with procedures
- Constructs the thing “to be known” in a limiting way

Conventional SR

- Much more problematic when you have a messy question or messy forms of evidence
- Claim that proceduralisation of method confers scientific credibility is not defensible *for all types of question*
- *For some types of question*, valorisation of procedure produces a method that is robust to “the author”, and stifles necessary elements of creativity, insight, and flexibility

Safe havens for abandoned babies

- Do want to be able to inform policy and law
- Can't do a trial
- Direct evidence hard to get
- Need to interrogate ethical and legal literatures
- Need to be able to draw on adjacent, not obviously "relevant" literatures – eg harm reduction
- Need to offer sophisticated, critical analysis



There are different types of review question

- Review questions are of different types and demand different forms of answers
- Review methods need to be matched to the type of questions
- Broadly, review methods are either *interpretive* or *aggregative*, though most contain elements of both

Some types of questions

- Listing
- Estimating
- Establishing relationships (esp of causality)
- Finding factors implicated in relationships
- Identifying causal chains
- Identifying conditions of causality
- Creating taxonomies
- Describing and characterising
- Determining stages
- Theorising and explaining

Aggregative syntheses - conventional SR

- Starts with tightly defined question
- Focus on summarising data
- Categories under which data are to be summarised are assumed to be secure and well-specified

Interpretive syntheses

- Start with a review topic; formulate the question more precisely after scoping stage and remain open to possibility of modification
- Sees the generation of the concepts of the analysis as one of its tasks - category specification therefore deferred til end of process

Approaches to synthesising qualitative and quantitative evidence

Primarily interpretive

- Critical interpretive synthesis
- Narrative summary
- Grounded theory
- Meta-ethnography
- Meta-synthesis
- Meta-study
- Miles & Huberman's data analysis techniques

Primarily aggregative

- Content analysis
- Case survey
- Qualitative comparative analysis
- Bayesian meta-analysis

Dixon-Woods M, Agarwal S, Jones DR, Young B, Sutton AJ (2005)
Synthesising qualitative and quantitative evidence: a review of methods.
Journal of Health Services Research and Policy 10: 45-53

Formulating questions in interpretive syntheses

- Iterative approach- question as compass rather than anchor
- Question emerges from analysis
- Very demanding and has implications for other aspects of SR methodology

Critical Interpretive Synthesis

- Sensitised to issues raised by conventional systematic review methodology
- But rooted firmly in qualitative tradition of inquiry and draws on interpretive synthesis methods such as meta-ethnography
- Suitable for messier questions with messier literatures
 - Dixon-Woods M, Cavers D, Agarwal S, Annandale E, Arthur A, Harvey J, Hsu R, Katbamna S, Olsen R, Smith LK, Riley R, Sutton AJ (2006) Conducting a critical interpretive review of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology* 6: 35

Why we need critical interpretive synthesis

- Situations where what is required is a *theorisation* of the evidence
- Where critique of literatures, questioning of taken-for-granted assumptions about concepts and methods is needed

Examples

- Why are rates of breast-feeding so low among the socio-economically deprived?
- Is the “inverse care law” true?

Critical Interpretive Synthesis

- Aim is the generation of a synthesising argument
- Sampling involves constant dialectic process concurrently with theory generation; highly iterative
- Development of theoretical categories is based on analysis of conceptual similarities and differences that identified in the literature, and constant comparison across these
- Synthesising argument – synthesis of synthetic and “found” constructs = mid-range theory

Critical interpretive synthesis

- Start with a review topic; formulate the question more precisely after scoping stage and remain open to possibility of modification
- Document searches, but draw creatively on literatures that don't fit precise search criteria
- Formal "critical appraisal" may be necessary for some, but not all, papers
- *Critique* is a key element of the process
- Synthesis is at the level of concepts
- Sampling and theory generation proceed concurrently

Formulating questions in interpretive syntheses

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Searching

- Has to proceed hand in hand with sampling
- Can include all study types
- Qualitative research hard to identify
 - Shaw RL, Booth A, Sutton AJ, Miller T, Smith JA, Young B, Jones DR, Dixon-Woods M. Finding qualitative research: an evaluation of search strategies. BMC Med Res Methodol. 2004 Mar 16;4:5.
- Difficult to demonstrate explicitness, reproducibility and comprehensiveness of searching
- Impossible to be exhaustive

Critical Interpretive Synthesis

- Conducts critique rather than critical appraisal – treats literature as an object of inquiry
- Questions “normal science” conventions and what influences choice of proposed solutions
- Embraces all types of evidence (qual, quan, theoretical) and is attentive to procedural defects in primary studies
- Acknowledges relevance of adjacent literatures
- Explicitly oriented towards theory generation
 - Dixon-Woods M, Cavers D, Agarwal S, Annandale E, Arthur A, Harvey J, Hsu R, Katbamna S, Olsen R, Smith LK, Riley R, Sutton AJ (2006) Conducting a critical interpretive review of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology* 6: 35

Appraising

- Not clear what to do with quality appraisals
- What if procedurally poor but conceptually great?
- How to adjust synthesis once paper has made its conceptual contribution?
- Can you conduct sensitivity analyses when aim is theorisation?

Appraising qualitative research: particular problems

- No hierarchy of evidence in qualitative research
- Debates about whether to exclude research on grounds of quality
- How to appraise qualitative research deeply and bitterly contested
- Not clear that structured approaches offer any advantage *in terms of consistency*
 - Dixon-Woods M, Sutton A, Shaw R, Miller T, Smith J, Young B, Bonas S, Booth A, Jones D. Appraising qualitative research for inclusion in systematic reviews: a quantitative and qualitative comparison of three methods. *J Health Serv Res Policy* 2007; 12: 42-7

Sampling

- Conventional reviews attempt to be exhaustive in identifying body of literature
- Good if you are doing an aggregative review where you have fixed concepts at the beginning and need to produce reliable estimates
- Not so good if you are doing an interpretive review
- Need to “sample”

The debate about sampling

- Theoretical sampling approach mirrors what happens in primary research
- Some have expressed concern that this is inappropriate in synthesis
- Safety measures (eg search for disconfirming cases) can be built in but difficult to do in practice

Synthesis

- Aim is the generation of a synthesising argument
- Sampling involves constant dialectic process concurrently with theory generation; highly iterative
- Development of theoretical categories is based on analysis of conceptual similarities and differences that identified in the literature, and constant comparison across these
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CIS of literature on access to healthcare

- “Inverse care law” is by no means proven
- Tendency to identify certain groups as likely victims of poor access
- Invoke normative assumptions about “need” relative to some apparently privileged group
- Tendency to assume lower use reflects discrimination
- Access is an emergent, not a fixed property
 - Utilisation studies very limited

CIS of access to healthcare

- Focus on how features of “the case” are orchestrated and how resources are mobilised around it
- Aspects of social and technical eligibility
- Influence of “operating conditions”

A CIS of access to healthcare

- Construct of “candidacy” generated through synthesis of the literature
- Describes how people’s eligibility for healthcare is determined between themselves and health services
- Continually negotiated property of individuals, subject to multiple influences
- Health services are continually constituting and seeking to define the appropriate objects of medical attention and intervention, while at the same time people are engaged in constituting and defining what they understand to be the appropriate objects of medical attention and intervention. Access represents a dynamic interplay between these simultaneous, iterative and mutually reinforcing processes

Outcomes of a CIS

- A review with fuzzy boundaries
- A mid-range theory
- Voice of “the author” is explicit and reflexively accounted for

The claim to credibility

Alternative accounts of the same evidence might be possible using different authorial voices, but....all accounts should be grounded in the evidence, verifiable and plausible, and that reflexivity will be paramount”.

Dixon-Woods, Bonas, Booth et al, 2006

Critical Interpretive Synthesis

- Cannot defend it as an inherently reproducible method of systematic review
- Does produce coherent and illuminating theory of a body of evidence that is based on detailed critical study of that evidence
- Puts “the author” back in
- Is explicit about the authorial voice at work
- Recognises the partial nature of any account of the evidence but is explicit and reflexive about this

CIS

- CISis not for faint-hearted! Involves creative processes of discernment, judgement, and interpretive skill
- Extremely hard work
- Only suitable for experienced and competent researchers
- Many issues remain to be resolved
- But need to avoid descent into proceduralism

Conclusions

- Review questions must be analysed to determine what type of answer they demand
- Method for synthesis should be matched to question
- Critical interpretive synthesis aims to put “the author” back in where appropriate