Narrative Synthesis

An introduction to tools and process

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Guidance on the conduct of narrative synthesis in systematic reviews
An ESRC Funded Initiative

Authors

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Structure of the presentation

- What is narrative synthesis (NS)
- Why do we need guidance?
- What is the guidance about?
- The guidance; methods and structure
- Applying the guidance
Structure of the presentation

- What is narrative synthesis (NS)
  - Why do we need guidance?
  - What is the guidance about?
  - The development of the guidance
  - Application of the guidance
What is Narrative Synthesis?

• Widely used & recommended in guidelines on SR

• No consensus on what ‘it’ is or how trustworthiness is established.

• So how do we define it?

“An approach to the synthesis of evidence relevant to a wide range of questions including but not restricted to effectiveness [that] relies primarily on the use of words and text to summarise and explain – to ‘tell the story’ – of the findings of multiple studies. NS can involve the manipulation of statistical data.”
Structure of the presentation

• What is narrative synthesis (NS)

◊ Why do we need guidance?

• What is the guidance about?

• The development of the guidance

• Application of the guidance
Why do we need guidance?

• Increasingly:
  – people want trustworthy evidence
  – ask questions that need diverse evidence

• Synthesising diverse evidence is challenging.

• Specialist synthesis methods are well developed but not appropriate for diverse evidence.

• Narrative synthesis is appropriate for use with diverse evidence but not well developed
Why do we need guidance?

• No authoritative body of knowledge or reliable and rigorous testing of NS.

• As a result:
  – There is great variability in the practice of NS
  – The methods used in reviews using NS are not transparent
  – Reproducibility of results of these reviews is an issue

• Guidance could help to address some problems

• But no guidance in methodological literature
Structure of the presentation

• What is narrative synthesis (NS)
• Why do we need guidance?
  ◦ What is the guidance about?
• The development of the guidance
• Application of the guidance
What is the guidance about?

• Advice on the conduct of NS in the context of:
  – systematic reviews of research evidence
  – Particular focus on effectiveness and implementation

• Descriptions of specific tools & techniques that can be used in the synthesis

• The product – at a minimum – is a summary of knowledge related to a specific review question
Where does the NS process ‘fit’?

Elements in a systematic review:

- Focus review & map the evidence
- Specify the review question
- Targeted search for relevant evidence
- Select studies to include in review
- Assess study quality and extract data
  - Synthesise findings from included studies
- Report the results and disseminate
Structure of the presentation

• What is narrative synthesis (NS)

• Why do we need guidance?

• What is the guidance about?

◊ The development of the guidance

• Application of the guidance
How we developed the guidance

- Multidisciplinary team
- Use of expert review panel
- Reviewed methodological literature
How we developed the guidance

• Search of literature involved three elements:
  – Traditional database search
  – Search of internet sites
  – Knowledge of team members

• Process generated 1,309 items
• Reviewed abstracts and full texts
  – 69 items judged to have some relevance
  – None focused specifically on NS
We concluded that

- Prescriptive guidance – a cook book on the conduct of NS - is not feasible

- The specific approach in an NS will depend on:
  - Types of research included (e.g. only quantitative, only qualitative, mixed data)
  - Study characteristics (design, participants, outcomes etc.)
How we developed the guidance

- **Stage 1**: Reading the literature to:
  - Inform design of a framework for the conduct of NS
  - Identify tools and techniques relevant to the NS process

- **Stage 2**: developed draft guidance including
  - a proposed framework for NS
  - examples of use of tools & techniques during synthesis process

- **Stage 3**: Applied guidance to two ‘demonstration’ reviews
  - One on effectiveness the other implementation
  - To provide practical examples of the use of the guidance.

- **Stage 4**: revised guidance on the basis of:
  - comments from expert reviews and
  - experience of ‘demonstration reviews’.
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ős Applying the guidance
Example review used:

Arai L, Britten N Popay J et al (forthcoming) Testing methodological developments in the conduct of narrative synthesis: a demonstration review of research on the implementation of smoke alarm interventions
The Narrative Synthesis Framework

• Developing a theory of change
• Developing a preliminary synthesis
• Exploring relationships in the data
• Assessing robustness of synthesis product

Not stages – NS an iterative process!
1: Developing a theory of change

• Inform decisions about the review question
• Contribute to the interpretation of findings
• Assess the applicability of findings

– No specific guidance re method
Questions

• How might smoke alarms save lives?

• How might thinking through this at the start of the review process impact on the review process or outcome?
2. Preliminary synthesis

• Organise findings to provide an initial description of patterns across the included studies
  - Textual descriptions
  - Tabulation
  - Grouping and clustering
  - Thematic analysis
    – Constructing a common rubric
    – Content analysis
    – Vote counting

illustrated in handout
Questions

• What are the benefits of the techniques for the review process, or the reviewer?

• Do any issues come to mind about good practice?

• Are there similarities to qualitative analysis processes?
Tools for preliminary synthesis

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<td>Sensitises reviewers to the content of each study, highlights and extracts main features, but maintains study as a whole and in context</td>
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<td><strong>Tabulation</strong></td>
<td>Allows comparison of main features across whole dataset, reduces volume</td>
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<td><strong>Grouping</strong></td>
<td>Takes into consideration major patterns in potential influencing factors e.g. context, intervention type</td>
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<td><strong>Thematic analysis</strong></td>
<td>Consistent analysis of content across studies. Identifies the range of factors, and the main/common themes.</td>
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3. Exploring relationships

- Relationships between study results and the key aspects of the study population, intervention and context
- Relationships between the findings across different studies

- Exploring study heterogeneity
  - Moderator variables and subgroup analyses
- Case descriptions
- Translation
  - Investigator/methodological triangulation
  - Conceptual triangulation
  - Ideas webbing/conceptual mapping

- Used in the demonstration synthesis, but not illustrated here
Questions

• What might be the advantages of working with graphical methods of representation for text-based data?

• What might be the limitations of textual, tabular and graphical methods for working with data?
## Impact of tools on synthesis

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<td>Good for structured comparison across cases and grouping</td>
<td>Problems of reduction and loss of context/detail</td>
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<td>Graphical methods</td>
<td>Good for identifying patterns, viewing the relationship of parts to whole, and for cross-linking</td>
<td>Care needed with isolation of concepts from their context and strength of evidence</td>
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4. Exploring robustness

• To assess the strength of evidence for drawing conclusions about the results of synthesis and their generalisability
  – Best Evidence Synthesis
  – Weight of Evidence Synthesis
  – Use of validity assessment
  – Checking with authors of primary studies
  – Critical reflection
Who is it aimed at?

• Aims to be accessible to wide range of people

• Users won’t need to be expert reviewers

• But need reasonable level of research experience – not novices!
Next steps

• Disseminating the guidance through:
  – Journal articles
  – Making it available for others to use
  – Working with others to translate it

• Hope to revise guidance on basis of the others experience
Thanks for joining us

For more information or copy of guidance:
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