Online Workshop: Qualitative Research Synthesis

Session 3:
Methods for Synthesizing Qualitative Evidence

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Methods for synthesizing qualitative evidence

Dr Ruth Garside. Senior Lecturer in Evidence Synthesis
Plan of the session

• Approaches to synthesis: Aggregative and interpretive methods
• Examples of qualitative synthesis methods: thematic analysis and meta-ethnography
• Presenting a qualitative evidence synthesis
• Knowledge translation
Follows on from presentations about:

- Nature of qualitative research
- Systematic review methods for qualitative research
- Searching for qualitative research
- Quality appraisal of qualitative research
- Data extraction
What is “synthesis”

• Combination of two or more items into a new whole
• The combination of ideas to form a theory or system
• NEW knowledge is generated which goes beyond the sum of its parts
Why synthesise qualitative research?

• Strategic
• Less wasteful
• Create more powerful explanations, higher order conceptualisation
• Broader, more encompassing theories
• Belief that it “will yield truths that are better, more socially relevant, or more complete” (Paterson et al, 2001)
• Enhance transferability of findings
<table>
<thead>
<tr>
<th>Stage</th>
<th>Typical activities</th>
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<tbody>
<tr>
<td>Developing research question</td>
<td>Assemble team; Consult; Agree approach</td>
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<tr>
<td>Scoping exercise</td>
<td>Identify relevant research; Refine methods</td>
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<tr>
<td>Identifying relevant literature</td>
<td>Develop Inclusion/Exclusion criteria; Focused searches; Citation searches</td>
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<tr>
<td>Initial assessment of study reports</td>
<td>Preliminary reading; Identify theories; Assess utility/relevance</td>
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<tr>
<td>Analysis and synthesis</td>
<td>Reading &amp; rereading study reports; Constant comparison; Assess validity</td>
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<tr>
<td>Preliminary synthesis</td>
<td>Categorising; tabulating; mindmaps; Explore relationships</td>
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<tr>
<td>Full synthesis</td>
<td>Thematic analysis; translation of findings; Theory development; rival explanations</td>
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<tr>
<td>Dissemination</td>
<td>Target audiences; Limitations of review</td>
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<tr>
<td>Throughout</td>
<td>Multiple viewpoints; Reflexivity; Audit trail; Ongoing consultation; revisit review purpose</td>
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</table>
Range of approaches and terminology

• Umbrella terms:
  – Qualitative Evidence Synthesis (2007)
  – Meta-synthesis (1996)
Range of approaches and terminology

• Specific approaches:
  – Meta-Ethnography (1988)
  – Meta-Study (2001)
  – Meta-Narrative review (2005)
  – Qualitative Interpretive Meta-Synthesis (2013)
Approaches to synthesis (I)

• Aggregative
  – More “additive” approach
  – Summation/ aggregation of the existing themes
  – Concepts clearly pre defined
  – More deductive
Approaches to synthesis (II)

- **Interpretative**
  - Interpretation of existing findings
  - Develops concepts and theories to explain evidence base
- **Inductive**
Methods of evidence synthesis

Figure 1. Methodological continuum of synthesis approaches and methods. Source: Adapted from Thomas et al. (2012).
Choosing a method

- Experience
- Time & resources
- Purpose of review
- Audience and purpose
- Type of evidence available
Examples of synthesis I: Thematic analysis
Origins

- Echoes thematic analysis in primary qualitative research
- May use line by line coding or extract themes before coding
- Codes often descriptive, but may build up to be more conceptual
Review questions

(i) What are children's perceptions of, and attitudes towards, healthy eating?
(ii) What do children think stops them from eating healthily?
(iii) What do children think helps them to eat healthily?
(iv) What ideas do children have for what could or should be done to promote their healthy eating?
Three analytic steps described

1. the coding of text 'line-by-line' (data driven codes);
2. the development of 'descriptive themes'; and
3. the generation of 'analytical themes' (theory driven codes).
Synthesis approach

- Findings of each study examined in turn, each sentence or paragraph assigned a descriptive code – “line by line coding” (e.g. children prefer fruit to vegetables) (in NVIVO) 36 initial codes.
- Similarities and differences between codes sought to group them into a hierarchical tree structure.
- New codes were created to capture the meaning of groups of initial codes. 13 descriptive themes.
- A narrative summary of the findings across the studies organized by these 13 descriptive themes was then written.
Figure 6.1 Interrelated descriptive themes identified across studies of children’s views (N=8)

- Understandings of healthy eating
  - Awareness and understanding of healthy eating concepts
  - ‘Good’ and ‘bad’ foods
  - Health consequences

- Chosen foods
  - Food preferences
  - Perceptions of health benefits
  - Knowledge-behaviour gap
  - Roles and responsibilities
  - Non-influencing factors

- Influences on foods eaten
  - Factors further constraining and already limited choice
  - School dinners as a social occasion
  - Promotion and provision of healthy foods contradiction

- Provided foods
  - Parental influence and food rules
  - Breaking rules and asserting independence

- Food in the school

- Food in the home
‘Good’ and ‘bad’ foods

Three studies asked children to name ‘good’ and ‘bad’ food and their reasons for these classifications (Edwards and Hartwell, 2003; Hart et al., 2002; Mauthner et al., 1993). Children in all these studies readily used the ‘food-health’ or ‘food-nutrition’ links described by Hart et al. (2002) as reasons for labelling foods good and bad (e.g. fat is bad because it causes heart disease; vegetables are good because they provide vitamins). Examples of bad food included: cereals with sugar in them; sweets and chocolates; junk food; and ‘fattening food’. Examples of good food included: fruit; vegetables; nuts; and milk.
Policy relevance?

- Reviewers inferred from these themes the factors that help and hinder healthy eating (analytic themes).
Final 6 analytic themes related to policy question (i)

(1) children do not see it as their role to be interested in health;
(2) children do not see messages about future health as personally relevant or credible;
(3) fruit, vegetables and confectionery have very different meanings for children;
Final 6 analytic themes related to policy question (ii)

(4) children actively seek ways to exercise their own choices with regard to food;
(5) children value eating as a social occasion; and
(6) children see the contradiction between what is promoted in theory and what adults provide in practice.
Examples of synthesis II: Meta-ethnography
Key text from 1988
Original research

Using meta ethnography to synthesise qualitative research: a worked example

Nicky Britten, Rona Campbell¹, Catherine Pope¹, Jenny Donovan¹, Myfanwy Morgan², Roisin Pill³

Department of General Practice and Primary Care, King's College, London; ¹Department of Social Medicine, University of Bristol; ²Department of Public Health Sciences, King's College, London; ³Department of General Practice, University of Wales College of Medicine, Cardiff, UK

Objectives: To demonstrate the benefits of applying meta ethnography to the synthesis of qualitative research, by means of a worked example.

Methods: Four papers about lay meanings of medicines were arbitrarily chosen. Noblit and Hare’s seven-step process for conducting a meta ethnography was employed: getting started; deciding what is relevant to the initial interest; reading the studies; determining how the studies are related; translating the studies into one another; synthesising translations; and expressing the synthesis.

Results: Six key concepts were identified: adherence/compliance; self-regulation; aversion; alternative coping strategies; sanctions; and selective disclosure. Four second-order interpretations (derived from the chosen papers) were identified, on the basis of which four third-order interpretations (based on the key concepts and second-order interpretations) were constructed. These were all linked together in a line of argument that accounts for patients’ medicine-taking behaviour and communication with health professionals in different settings. Third-order interpretations were developed which were not only consistent with the original results but also extended beyond them.

Conclusions: It is possible to use meta ethnography to synthesise the results of qualitative research. The worked example has produced middle-range theories in the form of hypotheses that could be tested by other researchers.


Introduction

Methods for synthesising the results of quantitative research are well developed. The science of meta analysis has established its own norms and procedures, the criteria for which are in the public domain.¹ Meta analysis is a central part of the methodological canon of \textit{evidence-based medicine}.² The scientific community has been happy to embrace these methods on the grounds that they work, and added-value is often assumed as a consequence of its application. However, meta analysis is not applicable to qualitative research because of the nature of its data. Qualitative research data are non-numerical, and are generated using methods that have their own paradigms of analysis which are distinct from that used for quantitative data. Qualitative data are not amenable to the same kinds of statistical analysis as quantitative data.²,³

There are also philosophic and \textit{methodological} reasons. Computerised literature searches are likely to miss much qualitative research that is published in books. Criteria for judging the quality of published research are contested, as is the very idea of developing such criteria.³ Statistical methods for aggregating quantitative data are inapplicable to qualitative research. Thus the attempt to find methods for treating qualitative research in a similar way to quantitative research is in vain.

In such circumstances it is not surprising that the scientific community has not wanted to contemplate, never mind engage, in such a task. Despite this, the problem of synthesising qualitative research continues. There is a demand to capture the findings of qualitative research and to address important questions in a concise manner. The need to synthesise qualitative research results is often a feature of necessity. This is especially relevant in the \textit{health services research} field, where policy decisions are often based on a paucity of research evidence with a strong qualitative component.
This is primarily approach to synthesis

• No guidance in the original text about:
  – Search strategies
  – Inclusion criteria
  – Quality appraisal tools applied outside of the synthesis

• Noblit:
  • “amazed” that the method “is being used mostly in fields of professional practice, as in evidence based practice”

Definition of synthesis is explicitly interpretative

Activity or the product of activity where some set of parts is combined or integrated into a whole...

(Synthesis) involves some degree of conceptual innovation, or employment of concepts not found in the characterization of the parts as a means of creating the whole

Seven stages of synthesis

1. Getting started: identifying an area of research interest.
2. Deciding what is relevant.
3. Repeated reading of studies.
4. Decide how studies are related.
5. Translation.
6. Synthesising the translations.
7. Expressing the synthesis.

"Unless there is some substantive reason for an exhaustive search, generalising from all studies of a particular setting yields trite conclusions” (p.28)
Key method of synthesis:

• Translation

— “One case is like another except that……” (p.38)
Translation occurs:

- At the level of existing interpretations of the data (how the researchers interpreted their data)

Translation occurs at the conceptual level
How do we make sense of the world? (Levels of interpretation)

• 1st order constructs:
  – Everyday ways of making sense of our world (seen as participant quotes)

• 2nd order constructs:
  – Social science researchers’ interpretations of this “common sense world” to academic concepts and theories

• 3rd order constructs?
  – Reviewers’ interpretations of the researchers’ interpretations.

(After Schultz)
# CVD prevention programmes

<table>
<thead>
<tr>
<th>Quote (1\textsuperscript{st} order)</th>
<th>Researchers’ interpretations (2\textsuperscript{nd} order)</th>
<th>Reviewers’ interpretation (3\textsuperscript{rd} order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Pamphlets involve a lot of reading...food sampling gives them the opportunity to feel relaxed and ask questions”</td>
<td>Practical demonstrations are more effective than provision of written information</td>
<td>Personalised support, allowing relationships to develop &amp; facilitating questioning, may be more effective.</td>
</tr>
<tr>
<td>“Sue was great, she had lots of information and advice”</td>
<td>Programme “champions” are effective at disseminating information about the interventions</td>
<td></td>
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Translation types I:

- Reciprocal translation
  
  - “in an iterative fashion, each study is translated into the terms of the others and vice versa”
  
  - “attention to which metaphors, themes, organizers, enable us to fully render the account in a reduced form.”
Reciprocal translation

- Similar to constant comparison
- Look for overlap, similarities, contradictions
- Are some concepts “better”? (scope, utility, explanatory power).
- Reviewer interpretation crucial (third order constructs/concepts/theory)
- Different ways of juxtaposing concepts (tabulation, mind maps, colour coding, short text descriptions)
Table 4 Experience of visiting the doctor for heavy menstrual bleeding

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<tr>
<td>Doctors fail to acknowledge women’s experience of symptoms</td>
<td>‘Need to be listened to and understood’</td>
<td>Drs need to ‘hear and respond in a way that is concordant with [women’s] concerns.’</td>
<td>‘GP’s did not listen carefully to women’ ... ‘women’s concerns not taken seriously.’</td>
<td>‘Repeatedly told that nothing was wrong’</td>
<td>Doctors may not value subjective descriptions of symptoms.</td>
</tr>
<tr>
<td>Gender</td>
<td>‘Good experience of dealing with practice nurses...more caring’</td>
<td>Gender of doctor importance ‘varied’</td>
<td></td>
<td></td>
<td>Gender of healthcare professional was a concern for some women.</td>
</tr>
<tr>
<td>Medical model unhelpfully privileges blood loss</td>
<td>General practitioners ‘miss the point’ if concentrate on blood loss’</td>
<td>Women ‘assumed that these [range of] symptoms would not be of interest to the gynaecologist’</td>
<td></td>
<td></td>
<td>Women and doctors may conspire to privilege blood loss. Disease model unhelpful to doctors as well as women.</td>
</tr>
<tr>
<td>Desire to identify pinpoint the ‘cause’</td>
<td>‘Need to name’ Wanted referral for ‘more thorough examination’</td>
<td>‘Desire for explanation and reassurance’</td>
<td></td>
<td></td>
<td>Concern about potential causes including cancer.</td>
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<tbody>
<tr>
<td>‘Need to be listened to and understood’</td>
<td></td>
<td>‘Did not listen fully to women’</td>
<td>‘Repeatedly told that nothing was wrong’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘Women’s concerns taken seriously’</td>
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## Meta-ethnographic synthesis
Adapted from Britten et al., 2003

<table>
<thead>
<tr>
<th>CONCEPTS described in primary studies</th>
<th>Second order interpretations</th>
<th>Third order interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence/compliance: correct and routine medicine taking</td>
<td>a) Patients conduct cost-benefit analyses: weigh up risks vs benefits</td>
<td>c) Self regulation includes the use of alternative coping strategies</td>
</tr>
<tr>
<td>Self regulation: problematic adherence; leaving off drugs</td>
<td>b) Medicine taking influenced by cultural meanings and resources</td>
<td></td>
</tr>
<tr>
<td>Aversion: eg dislike of taking drugs; harmful side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative coping strategies: eg Traditional remedies</td>
<td></td>
<td></td>
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<tr>
<td>Sanctions: Drs talk severely about need to take tablets regularly; coercion from significant others, fear of coercion</td>
<td>d) Self regulation is... inhibited by... the threat of social and professional sanctions</td>
<td>e) Self regulation flourishes if sanctions are not severe</td>
</tr>
<tr>
<td>Selective disclosure: patients don't tell Dr of altered doses; manage info to psychiatrists</td>
<td>f) Patients may not articulate views which they do not perceive as medically legitimated</td>
<td>g) Alternative coping strategies are not seen by patients as medically legitimate</td>
</tr>
<tr>
<td></td>
<td>h) Fear of sanctions and guilt produce selective disclosure</td>
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</tbody>
</table>
Translation types II:

• Refutational translation
  – “a specific form of interpretation”
  – Oppositional/ counter argument findings
  – Specific search for metaphors, themes, and concepts that oppose/ refute emerging patterns.
Table 3 Themes reflecting uncertainty and influences on seeking help

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<tbody>
<tr>
<td>HMB as a cleansing process</td>
<td>‘Cleaning out the womb is necessary and healthy’</td>
<td>–</td>
<td>‘Welcome heavy periods’</td>
<td>–</td>
<td>Internal conflict between understanding of purpose of periods (even HMB) and impact on life.</td>
</tr>
<tr>
<td>Time limited in National Health Service</td>
<td>–</td>
<td>‘Everybody is overworked in the health service’</td>
<td>Worried about ‘wasting doctors time’</td>
<td>–</td>
<td>Reticence about accessing health care as unsure whether they have a legitimate complaint. Women feel that they should put up with periods even when they are an unpleasant experience. Impact of HMB may not be consistent – physical and psychological/emotional input. Refutational findings – suggest that women are influenced by external sources and these may either encourage or discourage accepting validity of experience.</td>
</tr>
<tr>
<td>Suffering as women’s lot</td>
<td>–</td>
<td>–</td>
<td>‘Women’s suffering is normal’</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Impact of unconnected emotional/ psychological health</td>
<td>–</td>
<td>‘Life stresses and traumatic life events’</td>
<td>‘Level of concern varies’ ‘watchful waiting’</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Varied confidence in validity of ‘sick role’</td>
<td>‘Authority for patient’</td>
<td>‘Question the validity of’</td>
<td>Unsure about ‘reality’</td>
<td>–</td>
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</tr>
<tr>
<td>Others encourage to enter the ‘sick role’</td>
<td>Others belittle level of suffering</td>
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Translation types III:

- Line of argument
  - “What can we say about the whole?” (p. 62)
  - Development of a new model, theory or understanding through the synthesis
Fig. 2. Model of medicine taking.

Outcomes of qualitative synthesis

- Description of a phenomenon
- Definition of a new concept
- Creation of a new typology
- Description of processes
- Explanations or theories
- Development of strategies
Presenting findings of qualitative synthesis

- Textual description
- Tables of findings
- Tables showing which sources contribute to a synthesized finding
- Summary statements
- Conceptual frameworks/diagrams
Welcome

Cochrane Collaboration 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 the Cochrane Collaboration and its network of people on policy and practice and qualitative evidence synthesis, develop and maintain methodological guidance, and provide training to those undertaking Cochrane reviews. From 2012 our mandate has been extended to include methods for undertaking systematic reviews of implementation.

Click here for a Canadian Cochrane Center YouTube Tutorial on Qualitative Evidence Synthesis from our lead convenor Professor Jane Noyes.

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2. **Research use**: This includes studying the use/non-use of research evidence in personal, practice and political decision-making, supporting those who wish to find and use research to help solve problems, and providing guidance and training in this area.

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  - Register for your first EPPI-Centre short course on UKPASS Between 23 October and 17 November 2014.
  - [Read More]

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  - Guide by EPPI-Centre staff, published by the Alliance for Useful Evidence, describes the logic of a systematic review, mixed methods reviews, the main stages of undertaking a review, and some of the key issues to consider during the process.
  - [Read More]
References


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Thomas J, Harden A. Methods for the thematic synthesis of qualitative research in systematic reviews. BMC Medical Research Methodology 2008; 8:45.
Thank you.

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Thank you for participating!

We invite you to:

• Provide your input on today’s session
• Share your ideas for future sessions
• Participate in the Community of Practice to continue the dialogue
• PLEASE CONTACT:

  joann.starks@sedl.org

Please fill out the brief Evaluation Form:
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