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How to ... synthesise qualitative data

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SUMMARY
Methods of qualitative synthesis are an important component of the research toolbox. In this article, we introduce several ways to approach qualitative data synthesis and discuss how to choose between them. We use published examples throughout to illustrate how these methods are used to address research questions.
INTRODUCTION

Many health care professionals will be familiar with the ‘hierarchy of evidence’ used to categorise quantitative research. Here, systematic review and meta-analysis sit at the top, offering the best current clinical evidence. There is growing recognition that this hierarchy is not applicable in the qualitative domain: as different methodologies can each yield equally useful and interesting results, different appraisal criteria exist for such studies. There remains considerable value in formal literature reviews, however. Reviews may be conducted for numerous reasons: as a major secondary research project in themselves; as a precursor to empirical work, such as for a postgraduate degree; to plan future programmes and to clarify and deepen knowledge of a particular area; or as a complement to quantitative reviews.

Descriptive reviews collate what has been found previously by other authors, whereas synthetic reviews seek to actively extend knowledge. This may be through pushing forwards with theorising about the topic of interest (meta-ethnography, realist review) or by setting the results within a broader context (scoping, critical review). As a result of the nature of qualitative research, the difference between descriptive and synthetic reviews can sometimes seem very little: for example, it is possible to synthesise papers simply by organising the results into themes. As with systematic reviews, however, a formal synthetic review implies a defined searching procedure, appropriate inclusion and exclusion criteria, and a clear analytic procedure.

Although qualitative review methods may appear daunting initially, some can be perfectly accessible to the new researcher. We introduce below techniques that we ourselves have found useful in our own work. Examples may be found in Table 1 below.

SCOPING REVIEW

This form of review has gained traction across social science. Scoping means looking across the depth and breadth of known scholarship and mapping the intellectual terrain. Qualitative, quantitative and mixed-methods studies may be included. Scoping reviews differ from systematic reviews in that they do not typically involve quality assessment at the inclusion stage. It is certainly possible to consider quality at the analytic stage, however. Scoping reviews are attractive to postgraduate students, because they are thorough and the publication of clear steps allows for a transparently rigorous analysis. They can also be used to identify gaps and deficiencies, as a precursor to empirical work.

NARRATIVE REVIEW

The purpose of a narrative review is not only to amalgamate findings, but also to provide interpretation and/or a critique of the work, and to provide a considered conclusion as to the state of research on that topic. In the context of illness experience or patient stories, narrative reviews allow a deeper understanding of the specific illness for the specific patient. The aim is not to ‘generalise’ but to understand how certain illness factors impact on certain patients in certain circumstances.

CRITICAL REVIEW

A critical review can encompass data gathered by any methods, but is defined by a critical analytic stance. This can seem confusing (surely all reviews should be critical?), but criticality becomes the defining feature. Critical reviews may consider aspects of how research has been approached and presented, and the position adopted by authors, as well as what has been researched and how well. They will often also consider broader layers of context. The papers reviewed may be presented in light of a particular theory or set of beliefs, combining the two in a way that advances thinking. In this sense, theory can be thought of as adding an extra layer of context. Critical reviews depend upon a strong element of reflexivity, and the rigour of such a review is judged on this as well as the methodology used.

REALIST REVIEW

Realist methods take a pragmatic approach, and are frequently used in public health and policy research. Realist review looks at what works and how it works for a given person in given circumstances. As with other synthetic reviews, the searching is ‘systematic’ in its conduct and addresses a specific research question. Realist reviews create a programme theory to bring together underpinning assumptions and empirical evidence, explicating the links between context, mechanisms and outcomes. For example, outcomes of a learning intervention may depend upon its context (the situation in which it is delivered) and its mechanisms (the actual intervention and/or how it is delivered, as well as who is delivering it). Realist reviews also recognise that even within the same context, mechanisms may differ, influencing both intended and unintended outcomes differently.

META-ETHNOGRAPHY

Meta-ethnography is perhaps the most commonly used approach. Despite the name, meta-ethnography can be conducted on most types of qualitative data, not just ethnographies. The aim

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of the synthesis is to create a new interpretation, or re-conceptualisation, of the phenomenon being studied. The method includes a seven-step iterative approach: getting started, deciding what is relevant to the initial interest, reading the studies, determining how the studies are related, translating studies into one another, synthesising translations and expressing the synthesis. This involves induction and interpretation, often similar to the methods used in the studies that it aims to synthesise. By the end, ideas, concepts and metaphors have been transferred or translated across the studies.

**RECOMMENDATIONS FOR STARTING OUT**

Literature reviews are the sine qua non of any research project, and there are many similarities between qualitative reviews and the more familiar quantitative reviews. Connecting them all is the central need for transparency, accountability and thoroughness. In that sense, any methodology that the reviewer is comfortable with may be chosen, so long as the steps are carefully adhered to and clearly reported. It can be very helpful to publish a review protocol, as this offers extra peer review and will provide a road map throughout the research.

We recommend some indispensable practicalities.

- **Construct a clear question, with clear boundaries; the inclusion of many studies is not always the aim of reviewing.** A clearly articulated question with fewer resultant studies might yield outcomes of better quality. An important exception is a scoping review, which relies on a broad question to construct a broad map of the field.

- **Recruiting a friendly local librarian, experienced in database searching, will greatly assist with finding all relevant papers.**

- **At least two people should conduct the review, ideally with some qualitative experience.**

- **Consider software (e.g. NVivo and COVidence) or spreadsheet programmes (e.g. Microsoft Excel) to help organise your information.**

- **There are two indispensable tools to use when reviewing: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) offers authors a rigorously produced minimum item set for reviews, whereas the Critical Appraisal Skills Programme (CASP) offers checklists for appraising the quality of different types of research.**

**Table 1. Examples of each methodology**

| Method         | Aim                                                                 | Findings                                                                 |
|----------------|----------------------------------------------------------------------|-------------------------------------------------------------------------|
| Narrative review | To explicate the role and function of mixed-methods research in medical education and how this ‘mixing’ is conceptualised by reviewing articles describing mixed-methods theory or practice in health professions education (HPE) | The author provides five key emergent messages, including a need to describe more explicitly how methods have been mixed and not simply report the qualitative and quantitative findings separately |
| Critical review | To critically review the connection between the ‘social missions’ of medical schools and admissions | Empirical evidence was found to be scarce. Medical schools rarely explicitly connected social missions with student admissions |
| Realist review  | To understand the mechanisms, contexts and outcomes of behavioural change interventions in antimicrobial prescribing among doctors in training | Demonstrated the complexity of social dynamics, including the influence of others (‘senior clinicians’) prescribing behaviours. Findings led to recommendations for educational design interventions |
| Meta-ethnography| To explore medical students’, patients’ and educators’ perceptions of what affects empathy and the expression of compassion, and to address gaps in knowledge, attitudes and skills on how education affects empathy and the expression of compassion in medical students | The authors included 33 qualitative studies in their analysis and presented four main themes as the outcome of their synthesis: seeing the patient as person; appreciating the elements of empathy and compassion; navigating in the training environment; and being guided by ideals |
| Scoping review  | Mapping the literature on critical pedagogy in medical education | The authors identified key themes in the literature: social, political and cultural awareness, and awareness of educational dynamics |
CONCLUSIONS

Qualitative data can be synthesised just as quantitative data can, although the methodologies applied are different. Instead of statistical techniques such as meta-analysis, we have described a number of accessible methods of qualitative research synthesis. We urge new researchers to explore these and apply them in their own work, as they offer the possibility of illuminating the topic of interest in rigorous and transparent ways.

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