

Chapter 20: Qualitative research and Cochrane reviews

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Key points

- Evidence from qualitative studies can play an important role in adding value to systematic reviews for policy, practice and consumer decision-making.
- It is likely that outcome studies included in Cochrane reviews will have qualitative research embedded within, or associated with, them.
- Qualitative research can contribute to Cochrane Intervention reviews in four ways:
 - informing reviews by using evidence from qualitative research to help define and refine the question, and to ensure the review includes appropriate studies and addresses important outcomes;
 - enhancing reviews by synthesizing evidence from qualitative research identified whilst looking for evidence of effectiveness;
 - extending reviews by undertaking a search to specifically seek out evidence from qualitative studies to address questions directly related to the effectiveness review; and
 - supplementing reviews by synthesizing qualitative evidence within a stand-alone, but complementary, qualitative review to address questions on aspects other than effectiveness.
- There are many methods of qualitative evidence synthesis that are appropriate to the aims and scope of Cochrane Intervention reviews.
- The synthesis of qualitative research is an area of debate and evolution. The Cochrane Qualitative Methods Group provides a forum for discussion and further development of methodology in this area.

20.1 Introduction

The purpose of this chapter is to outline ways in which qualitative research might be used to inform, enhance, extend and supplement Cochrane reviews. Qualitative evidence is not intended to contribute to the measures of effect of interventions, but rather to help explain, interpret and apply the results of a Cochrane review. In this way, evidence derived from qualitative studies complements systematic reviews of quantitative studies.

This chapter aims to enable authors to:

1. consider the types of reviews and review questions for which a synthesis of qualitative evidence could enhance or extend a Cochrane review;
2. consider the resource and methodological issues when deciding to synthesize qualitative evidence to complement a Cochrane review;
3. signpost some of the approaches and methods available for the synthesis of qualitative evidence; and
4. access further information, advice and resources if required.

The chapter is divided into two parts. The first part (Section 20.2) provides some considerations and guidance for the incorporation of evidence from qualitative research in Cochrane reviews, including resource implications. The second part (Section 20.3) provides a more general discussion of methodological issues, key reading and the role and details for the Cochrane Qualitative Research Methods Group. We provide an exemplar showing how a synthesis of qualitative evidence has been used to complement an existing Cochrane review of effects.

20.2 Incorporating evidence from qualitative research in Cochrane Intervention reviews: concepts and issues

20.2.1 Definition of qualitative research

Qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them (Denzin 1994). Qualitative research is intended to penetrate to the deeper significance that the subject of the research ascribes to the topic being researched. It involves an interpretive, naturalistic approach to its subject matter and gives priority to what the data contribute to important research questions or existing information.

Within health care an understanding of the value of evidence from qualitative research to systematic reviews must consider the varied and diffuse nature of evidence (Popay 1998b, Pearson 2005). Qualitative research encompasses a range of philosophies, research designs and specific techniques including in-depth qualitative interviews; participant and non-participant observation; focus groups; document analyses; and a number of other methods of data collection (Pope 2006). Given this range of data types, there are also diverse methodological and theoretical approaches to study design and data analysis such as phenomenology; ethnography; grounded theory; action research; case studies; and a number of others. Theory and the researchers' perspective also play a key role in qualitative data analysis and in the bases on which generalizations to other contexts may be made.

Within the empirical sciences, the standing of a given theory or hypothesis is entirely dependent upon the quantity and character of the evidence in its favour. It is the relative weight of supporting evidence that allows us to choose between competing theories. Within the natural sciences, knowledge generation involves testing a hypothesis or a set of hypotheses by deriving consequences from it and then testing whether those consequences hold true by experiment and observation.

Health professionals seek evidence to substantiate the worth of a very wide range of activities and interventions and thus the type of evidence needed depends on the nature of the activity and its purpose. For many research questions, for example, those about parental beliefs and childhood vaccination (Mills 2005a, Mills 2005b), qualitative research is an appropriate and desirable methodology.

20.2.2 Using evidence from qualitative research in Cochrane reviews

Cochrane Intervention reviews aim primarily to determine whether an intervention is effective compared with a control and, if so, to estimate the size of the effect. High quality randomized trials are central to the endeavours of The Cochrane Collaboration in this respect. It is neither appropriate nor possible to include evidence from qualitative research in all Cochrane reviews.

However, it is increasingly being recognized that evidence from qualitative studies that explore the experience of those involved in providing and receiving interventions, and studies evaluating factors that shape the implementation of interventions, have an important role in ensuring that systematic reviews are of maximum value to policy, practice and consumer decision-making (Mays 2005, Arai 2005, Popay 2005).

The relevance of qualitative evidence to the assessment of interventions has only recently received recognition in the health field, but it is now more common for qualitative components to be built into the evaluation of health interventions (Pope 2006) and for the evaluation of complex interventions such as differing models of health service delivery to use a 'mixed methods' approach. It is therefore increasingly likely that outcome studies included in Cochrane reviews will have qualitative research embedded within, or associated with, them. Authors of Cochrane reviews are therefore increasingly asking how to utilize evidence from qualitative research to enhance the relevance and utility of their review to potential users.

A synthesis of evidence from qualitative research can explore questions such as how do people experience illness, why does an intervention work (or not), for whom and in what circumstances? In some reviews, particularly those addressing healthcare delivery, it may be desirable to draw on qualitative evidence to address questions such as what are the barriers and facilitators to accessing health care, or what impact do specific barriers and facilitators have on people, their experiences and behaviours? These may be generated, for example, through ethnographies and interview studies of help-seeking behaviour. Evidence from qualitative research can help with interpretation of systematic review results by aiding understanding of the way in which an intervention is experienced by all of those involved in developing, delivering or receiving it; what aspects of the intervention they value, or not; and why this is so. These types of qualitative evidence can provide insight into factors that are external to an intervention including, for example, the impact of other policy developments, factors which facilitate or hinder successful implementation of a programme, service or treatment and how a particular intervention may need to be adapted for large-scale roll-out (Roen 2006).

We identify four ways in which qualitative research can contribute to Cochrane Intervention reviews for health policy and practice (Popay 2006a):

1. **Informing** reviews by using evidence from qualitative research to help define and refine the question. This ensures the review includes appropriate studies and addresses important outcomes, allowing the review to be of maximum relevance to potential users.
2. **Enhancing** reviews by synthesizing evidence from qualitative research identified whilst looking for evidence of effectiveness. Qualitative evidence associated with trials can be used to explore

issues of implementation of the intervention. We consider qualitative research performed alongside randomized trials in more detail in Section 20.2.3.

3. **Extending** reviews by undertaking a search and synthesis specifically of evidence from qualitative studies to address questions directly related to the effectiveness review.
4. **Supplementing** reviews by synthesizing qualitative evidence to address questions on aspects other than effectiveness.

Qualitative syntheses for extending and supplementing reviews take either a multi-level or a parallel synthesis approach, as discussed in Section 20.3.2.5. No template is currently in place to allow a Cochrane review solely of qualitative evidence.

The Cochrane Public Health and Health Promotion field have produced additional guidance on the types of reviews and questions where qualitative research can add value (see Chapter 21). Such reviews are designed to answer the following questions: 1) does the intervention work (effectiveness), 2) why does it work or not work – including how does it work (feasibility, appropriateness and meaningfulness), and 3) how do participants experience the intervention?

Where qualitative research is used to enhance or extend a Cochrane Intervention review, methods for the specification, identification, critical appraisal and synthesis of qualitative research should be described under a separate heading under ‘Data collection and analysis’ in the Methods of the review.

20.2.3 Considering qualitative studies that are identified within, or alongside, randomized controlled trials.

As ‘mixed methods’ evolve to evaluate the effects of complex interventions such as health service delivery strategies, it is increasingly likely that studies included in Cochrane Intervention reviews will have qualitative research embedded within or associated with them, although the evidence resulting from the qualitative studies may not be reported in the same publication as that of the trial. For example, in an exemplar review we summarize in Box 20.3.a, five out of six trials included in the Cochrane Intervention review had a qualitative component or associated study, although not all qualitative data had been analysed or published. Importantly, this qualitative component was not always referenced in the trial report. Indeed some studies only came to light after making contact with the trial principal investigator.

When considering qualitative research identified within or alongside randomized trials, the following issues need to be considered:

1. Identification of qualitative evidence: Qualitative evidence retrieved using a topic-based search strategy designed to identify trials cannot be viewed as being either comprehensive or representative. Such a search strategy is not designed for the purpose of identifying qualitative studies and indeed achieves a measure of specificity by purposefully excluding many qualitative research types.
2. Qualitative evidence synthesis to explore the experience of having the disease: If the experience of the disease is the focus of interest then qualitative sources identified from the trial search strategy will not necessarily provide a holistic or comprehensive view. In these cases a multilevel or parallel synthesis should be considered or facilitated (see Section 20.3.2.5). Ideally an author would work with a qualitative researcher and information specialist to develop a qualitative search strategy to identify other relevant studies.
3. Qualitative synthesis to explore issues of implementation of the intervention: If issues surrounding implementation are the focus of interest then qualitative evidence embedded within or associated with the trials would be most relevant. Such implementation evidence is most likely to be

generated by mixed methods research and to include both qualitative and quantitative evidence. Steps need to be taken to identify all qualitative sources associated with the trials, such as undertaking additional targeted searching and contacting the trial principal investigator.

4. Considering qualitative evidence within studies excluded from Cochrane Intervention reviews: There may be occasions when a trial does not meet the eligibility criteria for a Cochrane Intervention review (for example due to unacceptable risk of bias) but the qualitative research embedded within or accompanying the trial is considered high quality. The guiding principle follows that if the qualitative evidence appears robust, the qualitative evidence can be incorporated into the review.

20.2.4 Resource considerations

The prospect of incorporating evidence from qualitative research in a Cochrane review inevitably has many consequences for authors and Cochrane Review Groups (CRGs). Resource limitations may dictate the extent to which supplementary qualitative syntheses can be undertaken to accompany reviews. Authors will need to consider the following when contemplating the incorporation of evidence from qualitative research into a Cochrane review:

- Does the team have the appropriate expertise or access to advice from experienced qualitative syntheses researchers?
- Will additional training be required?
- Will the budget cover the additional time and resources needed?
- Does the team have access to appropriate databases and journals?
- Does the team have access to an information specialist who is familiar with the particular challenges of retrieving qualitative research?
- Does the CRG responsible for the review support the incorporation of qualitative evidence and have the resources to support the review through the editorial process?

20.3 Qualitative evidence synthesis

20.3.1 Exemplar of synthesizing qualitative evidence to supplement a Cochrane Intervention review: directly observed therapy and tuberculosis (TB)

Before considering methodology for qualitative evidence synthesis, we provide an exemplar, summarized in [Box 20.3.a](#). The full review is published in the *Journal of Advanced Nursing* (Noyes 2007). This parallel qualitative evidence synthesis both extends and supplements a Cochrane Intervention review of directly observed therapy (supervised swallowing of medication) as an intervention to improve peoples' adherence to TB regimens (Volmink 2007), which included six randomized trials but found no statistically significant effect of directly observed therapy (DOT) when compared with people treating themselves at home. The accompanying synthesis of qualitative evidence focuses on lay experiences and perceptions of TB treatment to consider whether evidence from these studies could help explain the results of the randomized trials and contribute to the development of policy for the treatment of TB. In doing so the qualitative evidence synthesis addressed questions beyond those of the Cochrane Intervention review such as the appropriateness of DOT and the way it was facilitated in practice.

Box 20.3.a: Directly observed therapy and tuberculosis: a synthesis of qualitative evidence summary

Background: DOT is part of a World Health Organization (WHO)-branded package of interventions

to improve the management of TB and adherence with treatment (Maher 1999). DOT involves asking people with TB to visit a health worker, or other appointed person, to receive and be observed taking a dose of medication. A Cochrane Intervention review of trials of DOT showed conflicting evidence as to the effects of DOT when compared with self-administration of therapy. To supplement this review, we conducted a synthesis of qualitative evidence concerning people with, or at risk of, TB, service providers and policy makers, to explore their experience and perceptions of TB and treatment. Findings were used to help explain and interpret the Cochrane Intervention review and to consider implications for research, policy and practice.

Review questions: Two broad research questions were addressed:

1. What are the facilitators and barriers to accessing and complying with tuberculosis treatment?
2. Can exploration of qualitative studies and/ or qualitative components of the studies included in the intervention review explain the heterogeneity of findings?

Method:

Search methods: A systematic search of the wider English-language literature was undertaken: The following terms were used: DOT; DOTS; Directly observed therapy; Directly observed treatment; supervised swallowing; self-supervis*; in combination with TB and tuberculosis. We experimented with using methodological filters by including terms such as 'qualitative', but found this approach unhelpful as the Medline MeSH heading 'Qualitative Research' was only introduced in 2003, and even after 2003 many papers were not identified appropriately as qualitative. We searched MEDLINE, CINAHL, HMIC, Embase, British Nursing Index, International Bibliography of the Social Sciences, Sociological Abstracts, SIGLE, ASSIA, Psych Info, Econ lit, Ovid, Pubmed, the London School of Hygiene and Tropical Medicine database of TB studies (courtesy of Dr Simon Lewin), and Google Scholar. Reference lists contained within published papers were also scrutinized. A network of personal contacts was also used to identify papers. All principal researchers involved in the six randomized trials included in the Cochrane Intervention review were contacted and relevant qualitative studies obtained.

Selection and appraisal of studies: The following definition was used to select studies: 'papers whose primary focus was the experiences and/or perceptions of TB and its treatment amongst people with, or at risk of, TB and service providers'. The study had to use qualitative methods of data collection and analysis, as either a stand-alone study or a discrete part of a larger mixed-method study. To appraise methodological and theoretical dimensions of study quality, two contrasting frameworks were used independently by JN and JP (Popay 1998a, Critical Appraisal Skills Programme 2006). Studies were not excluded on quality grounds, but lower quality studies were reviewed to see if they altered the outcome of the synthesis – which they did not.

Analysis: Thematic analysis techniques were used to synthesize data from 1990-2002, and an update of literature to December 2005. Themes were identified by bringing together components of ideas, experiences and views embedded in the data – themes were constructed to form a comprehensive picture of participants' collective experiences. A narrative summary technique was used to aid interpretation of trial results.

Findings: Fifty-eight papers derived from 53 studies were included. Five themes emerged from the 1990-2002 synthesis, including: socio-economic circumstances, material resources and individual agency; explanatory models and knowledge systems in relation to tuberculosis and its treatment; the experience of stigma and public discourses around tuberculosis; sanctions, incentives and support, and the social organization and social relationships of care. Two additional themes emerged from the 2005 update: the barriers created by programme implementation, and the challenge to the model that culturally determined factors are the central cause of treatment failure.

Conclusions: The Cochrane Intervention review did not show statistically significant differences between DOT and self-supervision, thereby suggesting that it was not DOT per se that led to an improvement in treatment outcomes. The six randomized trials tested eight variations of DOT compared with self-supervision and varied enormously in the degree to which they were tailored around the needs of people with TB. The variants of DOT differed in important ways in terms of who

was being observed, where the observation took place and how often observation occurred. The synthesis of qualitative research suggests that these elements of DOT will be crucial in determining how effective a particular type of DOT will be in terms of increased cure rates. The qualitative review also highlighted the key role of social and economic factors and physical side effects of medication in shaping behaviour in relation to seeking diagnosis and adhering to treatment. More specifically, a predominantly inspectorial approach to observation is not likely to increase uptake of service or adherence with medication. Inspectorial elements may be needed in treatment packages, but when the primary focus of direct observation was inspectorial rather than supportive in nature, observation was least effective. Direct observation of an inspectorial nature had the most negative impact on those who had the most to fear from disclosure, such as disadvantaged women who experienced gender-related discrimination. In contrast, treatment packages in which the emphasis is on person-centred support are more likely to increase uptake and adherence. Qualitative evidence also provided some insights into the type of support that people with TB find most helpful. Primarily, the ability of the observer to add value depended on the observer and the service being able to adapt to the widely-varying individual circumstances of the person being observed (age, gender, agency, location, income, etc.). Given the heterogeneity amongst those with TB, findings support the need for locally tailored, patient-centred programmes rather than a single world wide intervention.

20.3.2 Methodological issues

The main methodological challenges of qualitative evidence syntheses relate to the design and conduct of search strategies, the appraisal of study quality and the appropriate methods for synthesis.

20.3.2.1 Search strategies

Significant progress has been made in analysing indexing systems of databases for qualitative studies. The Hedges Project at McMaster University has expanded its coverage of empirically-tested methodological filters to include qualitative research filters for MEDLINE (Wong 2004), CINAHL (Wilczynski 2007), PsycINFO (McKibbin 2006) and EMBASE (Walters 2006). Nevertheless evidence from qualitative studies collected and reported within randomized trials or as part of linked studies are difficult to retrieve (Evans 2002). MEDLINE introduced the MeSH term 'qualitative research' only in 2003. CINAHL introduced 'Qualitative Studies' in 1988, reflecting particular interest in qualitative studies for nursing researchers, with a corresponding focus on 'quality of life' issues (see Chapter 17, Section 17.3). However, locating qualitative studies remains problematic because of the varied use of the term 'qualitative' (Grant 2004).

In addition, current strategies for indexing terms related to qualitative study designs and protocol-driven search strategies are only of limited value (Evans 2002, Barroso 2003, Greenhalgh 2005). Review authors must be aware that limiting a search to well-known databases may result in missing much useful information. An audit of sources for a review of complex interventions (including qualitative evidence) found that only 30% were identified from databases and hand searches. About half of studies were identified by 'snowballing' and another 24% by personal knowledge or personal contact (Greenhalgh 2005). Search strategies to identify qualitative studies using a range of different qualitative methods need to be further developed.

While there is general agreement on the need for search strategies aiming to identify qualitative research to be systematic and explicit, there is recent debate on whether qualitative evidence syntheses share the need for comprehensive, exhaustive searches. It has been argued that a more purposive sampling approach, aiming to provide a holistic interpretation of a phenomenon, where the extent of searching is driven by the need to reach theoretical saturation and the identification of the 'disconfirming case', may be more appropriate (Dixon-Woods 2006). Nevertheless this places an even greater imperative to improve quality of reporting standards of search methods (Booth 2006).

20.3.2.2 Critical appraisal

Assessment of study quality (critical appraisal) is a particularly contested issue in relation to qualitative evidence synthesis. At present, opinion on the value of formal quality assessment is divided and there is insufficient evidence to inform a judgement on the rigour or added value of various approaches.

This is an evolving field and Cochrane Qualitative Research Methods Group members are actively involved in contributing to knowledge and practice in this area. We, however, feel that it is important to consider and debate the arguments for and against critical appraisal in qualitative evidence synthesis.

Over one hundred tools and frameworks are available to aid the appraisal of qualitative research, mirroring those available for the appraisal of methodological quality in randomized trials and other forms of quantitative research (Vermeire 2002, Cote 2005). However, it is important to recognize that questions about 'quality' are very different in the context of qualitative research. Formal appraisal processes and standards of evidence presented as rigid checklists informing an 'in or out' decision can be argued to be inappropriate for qualitative research (Popay 1998a, Barbour 2001, Spencer 2003). Rather, such tools are perhaps best utilized as part of a process of exploration and interpretation. Studies rated of low methodological quality on the basis of a rigid formulaic method can generate new insights, grounded in the data, while methodologically sound studies may suffer from poor interpretation, leading to insufficient insight into the phenomenon under study. Dixon-Woods et al. compared three structured appraisal approaches and concluded that structured approaches may not produce greater consistency of judgements about whether to include qualitative papers in a systematic review (Dixon-Woods 2007).

A further issue relates to the timing of quality assessment and when outcomes from the process should be taken into account – should critical appraisal be viewed as a hurdle for establishing a quality threshold or as a filter for mediating the differing strength of the resultant messages from included research?

If authors decide to incorporate quality appraisal as part of the systematic review process then they may use the framework that is integral to the particular method (such as the Evidence for Policy and Practice Information (EPPI) approach or Joanna Briggs Institute (JBI) approach), or select any published qualitative appraisal tool, framework or checklist. Spencer et al. have undertaken a review of many of the current appraisal frameworks and checklists, which authors may find helpful in deciding which approach to apply (Spencer 2003). Expert judgement is also an important factor when appraising the quality of studies.

Key references reflecting this debate are included in Section [20.6.6: Further Reading](#).

20.3.2.3 Synthesizing evidence from qualitative research

Qualitative evidence synthesis is a process of combining evidence from individual qualitative studies to create new understanding by comparing and analysing concepts and findings from different sources of evidence with a focus on the same topic of interest. Therefore, qualitative evidence synthesis can be considered a complete study in itself, comparable to any meta-analysis within a systematic review on effects of interventions or diagnostic tests. It can be an aggregative or interpretive process but requires transparency of process and requires authors to identify and extract evidence from studies included in the review; to categorize the evidence; and to combine these categories to develop synthesized findings. In undertaking this methodological work, however, it is important to recognize that the real

prize from the synthesis of qualitative evidence is not just a description of how people feel about an issue or treatment but an understanding of ‘why’ they feel and behave the way they do (Popay 2005).

For example, primary qualitative research on the experience of chronic illness presents people’s accounts of the onset of their illness. But this body of work also moves beyond description to seek to explain the social purpose of these accounts – showing how through these narratives people ‘reconstruct’ a sense of worth in a social context in which all illness has moral overtones (Williams 1984). Similarly, a recent systematic review of qualitative research on medicine taking (Campbell 2003, Pound 2005) utilizing meta-ethnography as a method for synthesis moves beyond providing a summary of recurring ‘themes’ across studies to build an explanation of why people use medication (or not) in the way they do.

20.3.2.4 Choosing an appropriate method

The choice of method for inclusion of qualitative evidence in a qualitative evidence synthesis will depend on a number of factors, including the:

- type and scope of the review and review question(s);
- pool of available evidence;
- expertise of the team; and
- available resources.

There are a number of evolving methods for the synthesis of qualitative and mixed-method evidence. Along with other interested individuals and systematic review organizations, Cochrane Qualitative Research Methods Group members are actively involved in developing and more recently beginning to evaluate the range of methods available. Members have contributed to two core texts on synthesizing qualitative and quantitative health evidence, which provide more detailed information and guidance on methods and processes (Petticrew 2006, Pope 2007).

We recommend that any high quality method of qualitative evidence synthesis may be used that is best suited to the type of Intervention review.

It is beyond the scope of the chapter to include detailed description of the range of methods available for qualitative and mixed-method evidence synthesis. A variety of methods have been used in published reviews. Examples include: Bayesian meta-analysis, critical interpretive synthesis, Evidence for Policy and Practice Information Coordinating (EPPI) Centre approach, Joanna Briggs Institute (JBI) approach, meta-ethnography, meta-synthesis, meta-study, meta-summary, narrative synthesis, qualitative evidence synthesis drawing on grounded theory, realist synthesis, and secondary thematic analysis.

Most methods have associated detailed guidance (see for example Noblit and Hare on meta-ethnography and Popay et al. on narrative synthesis (Noblit 1988, Popay 2006b)), which should be referred to. Dixon-Woods et al. provide a detailed overview of the potential of several methods and associated challenges (Dixon-Woods 2005, Dixon-Woods 2006). As yet, little evaluation has been undertaken to determine the robustness of different methods. Further reading can be found in [Section 20.6](#).

20.3.2.5 Approaches to integrating qualitative and quantitative evidence syntheses

There are two broad approaches that can be used to integrate qualitative and quantitative findings:

1. Multilevel syntheses: Qualitative evidence (synthesis 1) and quantitative evidence (synthesis 2) can be conducted as separate streams or separate, but linking, reviews and the product of each synthesis is then combined (synthesis 3) (see, for example, Thomas et al. (Thomas 2004)).
2. Parallel syntheses: Qualitative evidence (synthesis 1) and quantitative evidence (synthesis 2) can be conducted as separate streams or separate but linked reviews. The qualitative synthesis (1) can then be used in parallel and juxtaposed alongside to aid the interpretation of synthesized trials (synthesis 2) (see, for example, Noyes and Popay (Noyes 2007)).

Multilevel and parallel syntheses both require a separate systematic review of evidence, which at a later stage is synthesized with, or juxtaposed alongside, the synthesis of trials. Guidance on the conduct of narrative synthesis (Popay 2006b) contains a toolkit for bringing together findings from different study designs within different methods and approaches. Further methodological work is required on the processes by which evidence from studies using different qualitative methods and generating a range of types of evidence can be synthesized and combined with quantitative findings on effect without compromising the need to minimize bias (Lucas 2007).

20.3.2.6 Conclusion

Interest in systematically reviewing broader forms of evidence and in particular evidence from qualitative research is being driven by a growing recognition that qualitative research can improve the relevance and utility of a review. However, research evidence that is rigorously generated, regardless of design, demands due consideration of its quality before it can be used in the clinical environment. To be considered for a Cochrane Intervention review, evidence from qualitative research must be subjected to equally rigorous methods of review. Methods for appraising and analysing evidence from qualitative research are now emerging and will continue to evolve over time. Further evidence is required to establish the rigour and added value of the various approaches to quality appraisal in the systematic review process.

20.4 Chapter information

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Box 20.4.a: The Cochrane Qualitative Research Methods Group

The Cochrane Qualitative Research Methods Group (QRMG) develops and supports methodological work on the inclusion in systematic reviews of evidence from research using qualitative methods and disseminates this work within and beyond the Collaboration's CRGs.

The QRMG is attempting to fulfil its role by:

- Identifying appropriate roles for evidence from qualitative research within the context of Cochrane systematic reviews.
- Collating, developing and disseminating appropriate methodological standards for:
 - searching for qualitative research relevant to Cochrane reviews;
 - critically appraising qualitative studies;

- combining evidence from qualitative research with other data within the context of a systematic review; and
 - dissemination of these methodological standards through various routes including contributing to the guidance for authors in the *Handbook*.
- Providing a forum for discussion and debate about the role of qualitative evidence within the systematic review process and the development of rigorous and systematic methods to promote this role to:
 - encourage transparency of, and learning about, method developments; and
 - encourage and facilitate liaison and sharing with other methods groups.
- Providing links for Cochrane Review Groups to people with expertise and experience of qualitative research to:
 - provide advice and support for people aiming to incorporate qualitative research into a review; and
 - provide a mechanism for evaluating and developing review protocols.
- Providing training for members of Cochrane and Campbell Review Groups.
- Maintaining a register/database of relevant methodological papers.
- Maintaining a register/database of systematic review protocols that include qualitative evidence synthesis or are solely focused on the systematic review of qualitative evidence.
- Maintaining a register/database of completed systematic reviews that include qualitative evidence synthesis; and of reviews that are solely focused on the systematic review of qualitative evidence.
- Surveying members on an annual basis to identify developing interests and ongoing contributions.

Members of the Group have contributed to the guidance on the commissioning and conduct of systematic reviews produced by the Centre for Reviews and Dissemination at the University of York and have supported the development of guidance produced by the Cochrane Health Promotion and Public Health Field.

Web site: www.joannabriggs.edu.au/cqrmg

20.5 References

Arai 2005

Arai L, Roen K, Roberts H, Popay J. It might work in Oklahoma but will it work in Oakhampton? Context and implementation in the effectiveness literature on domestic smoke detectors. *Injury Prevention* 2005; 11: 148-151.

Barbour 2001

Barbour RS. Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *BMJ* 2001; 322: 1115-1117.

Barroso 2003

Barroso J, Gollop CJ, Sandelowski M, Meynell J, Pearce PF, Collins LJ. The challenges of searching for and retrieving qualitative studies. *Western Journal of Nursing Research* 2003; 25: 153-178.

Booth 2006

Booth A. "Brimful of STARLITE": toward standards for reporting literature searches. *Journal of the Medical Library Association* 2006; 94: 421-429.

Campbell 2003

Campbell R, Pound P, Pope C, Britten N, Pill R, Morgan M, Donovan J. Evaluating meta-

ethnography: a synthesis of qualitative research on lay experiences of diabetes and diabetes care. *Social Science and Medicine* 2003; 56: 671-684.

Cote 2005

Cote L, Turgeon J. Appraising qualitative research articles in medicine and medical education. *Medical Teacher* 2005; 27: 71-75.

Critical Appraisal Skills Programme 2006

Critical Appraisal Skills Programme. 10 questions to help you make sense of qualitative research [2006]. Available from: <http://www.phru.nhs.uk/Pages/PHD/resources.htm> (accessed 1 January 2008).

Denzin 1994

Denzin NK, Lincoln YS. Introduction. Entering the field of qualitative research. In: Denzin NK, Lincoln YS (editors). *Handbook of Qualitative Research*. Thousand Oaks (CA): Sage Publications, 1994.

Dixon-Woods 2005

Dixon-Woods M, Agarwal S, Jones D, Young B, Sutton A. Synthesising qualitative and quantitative evidence: a review of possible methods. *Journal of Health Services Research and Policy* 2005; 10: 45-53.

Dixon-Woods 2006

Dixon-Woods M, Bonas S, Booth A, Jones DR, Miller T, Sutton AJ, Shaw RL, Smith JA, Young B. How can systematic reviews incorporate qualitative research? A critical perspective. *Qualitative Research* 2006; 6: 27-44.

Dixon-Woods 2007

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. *Journal of Health Services Research and Policy* 2007; 12: 42-47.

Evans 2002

Evans D. Database searches for qualitative research. *Journal of the Medical Library Association* 2002; 90: 290-293.

Grant 2004

Grant MJ. How does your searching grow? A survey of search preferences and the use of optimal search strategies in the identification of qualitative research. *Health Information and Libraries Journal* 2004; 21: 21-32.

Greenhalgh 2005

Greenhalgh T, Peacock R. Effectiveness and efficiency of search methods in systematic reviews of complex evidence: audit of primary sources. *BMJ* 2005; 331: 1064-1065.

Lucas 2007

Lucas PJ, Baird J, Arai L, Law C, Roberts HM. Worked examples of alternative methods for the synthesis of qualitative and quantitative research in systematic reviews. *BMC Medical Research Methodology* 2007; 7: 4.

Maher 1999

Maher D, Mikulencak M. *What is DOTS? A Guide to Understanding the WHO-recommended TB Control Strategy Known as DOTS*. Geneva (Switzerland): World Health Organization, 1999.

Mays 2005

Mays N, Pope C, Popay J. Systematically reviewing qualitative and quantitative evidence to inform management and policy-making in the health field. *Journal of Health Services Research and Policy* 2005; 10 (Suppl 1): 6-20.

McKibbon 2006

McKibbon KA, Wilczynski NL, Haynes RB. Developing optimal search strategies for retrieving qualitative studies in PsycINFO. *Evaluation and the Health Professions* 2006; 29: 440-454.

Mills 2005a

Mills E, Jadad AR, Ross C, Wilson K. Systematic review of qualitative studies exploring parental beliefs and attitudes toward childhood vaccination identifies common barriers to vaccination. *Journal of Clinical Epidemiology* 2005; 58: 1081-1088.

Mills 2005b

Mills EJ, Montori VM, Ross CP, Shea B, Wilson K, Guyatt GH. Systematically reviewing qualitative studies complements survey design: an exploratory study of barriers to paediatric immunisations. *Journal of Clinical Epidemiology* 2005; 58: 1101-1108.

Noblit 1988

Noblit GW, Hare RD. *Meta-ethnography: Synthesising Qualitative Studies* (Qualitative Research Methods). London: Sage Publications, 1988.

Noyes 2007

Noyes J, Popay J. Directly observed therapy and tuberculosis: how can a systematic review of qualitative research contribute to improving services? A qualitative meta-synthesis. *Journal of Advanced Nursing* 2007; 57: 227-243.

Pearson 2005

Pearson A, Wiechula R, Court A, Lockwood C. The JBI model of evidence-based healthcare. *JBI Reports* 2005; 3: 207-216.

Petticrew 2006

Petticrew M, Roberts H. *Systematic Reviews in the Social Sciences: A Practical Guide*. Oxford (UK): Blackwell, 2006.

Popay 1998a

Popay J, Rogers A, Williams G. Rationale and standards for the systematic review of qualitative literature in health services research. *Qualitative Health Research* 1009; 8: 341-351.

Popay 1998b

Popay J, Williams G. Qualitative research and evidence-based healthcare. *Journal of the Royal Society of Medicine* 1998; 91 (Suppl 35): 32-37.

Popay 2005

Popay J. Moving beyond floccinaucinihilipilification: enhancing the utility of systematic reviews. *Journal of Clinical Epidemiology* 2005; 58: 1079-1080.

Popay 2006a

Popay J. Incorporating qualitative information in systematic reviews. *14th Cochrane Colloquium*, Dublin (Ireland), 2006.

Popay 2006b

Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, Britten N, Roen K, Duffy S. Guidance on the conduct of narrative synthesis in systematic reviews. Results of an ESRC funded research project. (Unpublished report, 2006, University of Lancaster, UK).

Pope 2006

Pope C, Mays N. Qualitative methods in health research. In: Pope C, Mays N (editors). *Qualitative Research in Health Care* (3rd edition). Malden (MA): Blackwell Publications/BMJ Books, 2006.

Pope 2007

Pope C, Mays N, Popay J. *Synthesising Qualitative and Quantitative Health Research: A Guide to Methods*. Maidenhead (UK): Open University Press., 2007.

Pound 2005

Pound P, Britten N, Morgan M, Yardley L, Pope C, Daker-White G, Campbell R. Resisting medicines: a synthesis of qualitative studies of medicine taking. *Social Science and Medicine* 2005; 61: 133-155.

Roen 2006

Roen K, Arai L, Roberts H, Popay J. Extending systematic reviews to include evidence on

implementation: methodological work on a review of community-based initiatives to prevent injuries. *Social Science and Medicine* 2006; 63: 1060-1071.

Spencer 2003

Spencer L. *Quality in Qualitative Evaluation: A Framework for Assessing Research Evidence*. London (UK): Government Chief Social Researcher's Office, Cabinet Office, 2003. Available from www.gsr.gov.uk/downloads/evaluating_policy/a_quality_framework.pdf.

Thomas 2004

Thomas J, Harden A, Oakley A, Oliver S, Sutcliffe K, Rees R, Brunton G, Kavanagh J. Integrating qualitative research with trials in systematic reviews. *BMJ* 2004; 328: 1010-1012.

Vermeire 2002

Vermeire E, Van Royen P, Griffiths F, Coenen S, Peremans L, Hendrickx K. The critical appraisal of focus group research articles. *European Journal of General Practice* 2002; 8: 104-108.

Volmink 2007

Volmink J, Garner P. Directly observed therapy for treating tuberculosis. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art No: CD003343.

Walters 2006

Walters LA, Wilczynski NL, Haynes RB. Developing optimal search strategies for retrieving clinically relevant qualitative studies in EMBASE. *Qualitative Health Research* 2006; 16: 162-168.

Wilczynski 2007

Wilczynski NL, Marks S, Haynes RB. Search strategies for identifying qualitative studies in CINAHL. *Qualitative Health Research* 2007; 17: 705-710.

Williams 1984

Williams G. The genesis of chronic illness: narrative re-construction. *Sociology of Health and Illness* 1984; 6: 175-200.

Wong 2004

Wong SS, Wilczynski NL, Haynes RB, Hedges Team. Developing optimal search strategies for detecting clinically relevant qualitative studies in MEDLINE. *Medinfo* 2004; 11: 311-316.

20.6 Further selected reading

20.6.1 Qualitative research, general

Boulton M, Fitzpatrick R. Qualitative methods for assessing health care. *Quality in Health Care* 1994; 3: 107-113.

Britten N, Jones R, Murphy E, Stacey R. Qualitative research methods in general practice and primary care. *Family Practice* 1995; 12:104-114

Esterberg KG. *Qualitative Methods in Social Research*. Boston (US): McGraw-Hill, 2002.

Giacomini MK. The rocky road: qualitative research as evidence. *Evidence-Based Medicine* 2001; 6: 4-5

Grbich C. *Qualitative Research in Health: An Introduction*. London (UK): Sage Publications, 1999.

Green J, Britten N. Qualitative research and evidence-based medicine. *BMJ* 1998; 316:1230-2.

Guba RG, Lincoln YS. Competing paradigms in qualitative research. In: Denzin NK, Lincoln YS (Eds) *Handbook of Qualitative Research*. Thousand Oaks (CA): Sage Publications, 1994.

Miller S, Fredericks M. The nature of "evidence" in qualitative research methods. *International Journal of Qualitative Methods* 2003; 2: Article 4. Retrieved 1 January 2008 from <http://www.ualberta.ca/~ijqm>.

Murphy E, Dingwall R, Greatbach D, Parker S, Watson P. Qualitative research methods in health technology assessment: a review of the literature. *Health Technology Assessment* 1998; 2: 1–274.

Popay J, Williams G. Qualitative research and evidence based healthcare. *Journal of the Royal Society of Medicine* 1998; 91(Suppl 35):32–37.

Pope C, Mays N. Qualitative research: reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health service research. *BMJ* 1995; 311: 42-45.

Pope C, Van Royen P, Baker R. Qualitative methods in research on healthcare quality. *Quality and Safety in Health Care* 2002; 11:148-152.

20.6.2 Qualitative methods

Fetterman DM. *Ethnography. Step by step*. Newbury Park (CA): Sage Publications, 1989.

Glaser BG, Strauss AL. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago (IL): Aldine, 1967.

Hammersley M. *Reading Ethnographic Research*. New York (NY): Langman, 1990.

Hammersley M, Atkinson P. *Ethnography: Principles in Practice*. London (UK): Routledge, 1995 .

Lambert H, McKevitt C. Anthropology in health research: from qualitative methods to multidisciplinary. *BMJ* 2002; 325: 210-213.

Maggs-Rapport F. Combining methodological approaches in research: ethnography and interpretive phenomenology. *Journal of Advanced Nursing* 2000; 31: 219-225.

Meyer J. Using qualitative methods in health related action research. In: Pope C, Mays N (Eds). *Qualitative Research in Health Care*. London (UK): BMJ Books, 1999.

Savage J. Ethnography and health care. *BMJ* 2000; 321:1400-1402.

Strauss A, Corbin J. *Grounded Theory in Practice*. Thousand Oaks (CA): Sage Publications, 1997.

Strauss A, Corbin J. *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks (CA): Sage Publications, 1998.

Taylor SJ, Bogdan R. *Introduction to Qualitative Research Methods: A Guidebook and Resource*. New York (NY), John Wiley & Sons, 1998.

Yin RK. *Case Study Research: Designs and Methods*. Newbury Park (CA): Sage Publications, 1989.

20.6.3 Qualitative literature searching

Flemming K, Briggs M. Electronic searching to locate qualitative research: evaluation of three strategies. *Journal of Advanced Nursing* 2007; 57: 95-100.

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 Medical Research Methodology* 2004; 4: 5

InterTASC Information Subgroup, University of York web site:

- <http://www.york.ac.uk/inst/crd/intertasc/>

20.6.4 Synthesizing qualitative evidence

Jensen LA, Allen MN. Meta-synthesis of qualitative findings. *Qualitative Health Research* 1996; 6: 553-560.

Noblit GW, Hare RD. *Meta-Ethnography: Synthesising Qualitative Studies*. Newbury Park (CA): Sage Publications, 1988.

- Paterson BL, Thorne SE, Canam C, Jillings C. *Meta-Study of Qualitative Health Research. A Practical Guide to Meta-Analysis and Meta-Synthesis*. Thousand Oaks (CA): Sage Publications, 2001.
- Pearson A. Balancing the evidence: incorporating the synthesis of qualitative data into systematic reviews. *JBI Reports* 2004; 2 :45-64.
- Sandelowski M, Barroso. Creating metasummaries of qualitative findings. *Nursing Research* 2003; 52: 226-33.
- Sandelowski M, Barroso J. *Handbook for Synthesising Qualitative Research*. New York (NY): Springer, 2007.
- Sandelowski M, Docherty S, Emden C. Focus on qualitative methods. Qualitative meta-synthesis: issues and techniques. *Research in Nursing and Health* 1997; 20: 365-371.
- Thorne S, Jensen L, Kearney MH, Noblit G, Sandelowski M. Qualitative metasynthesis: reflections on methodological orientation and ideological agenda. *Qualitative Health Research* 2004; 14: 1342-1365.
- Zhao S. Metatheory, metamethod, qualitative meta-analysis: what, why and how? *Sociological Perspectives* 1991; 34: 377-390.

20.6.5 Synthesizing qualitative and quantitative evidence

- Dixon-Woods M, Cavers D, Agarwal S, Annandale E, Arthur A, Harvey J, Hsu R, Katbamna S, Olsen R, Smith L, Riley R, Sutton AJ. Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. *BMC Medical Research Methodology* 2006; 6: 35.
- Dixon-Woods M, Fitzpatrick R, Roberts K. Including qualitative research in systematic reviews; opportunities and problems. *Journal of Evaluation in Clinical Practice* 2001; 7: 125-133.
- Dixon-Woods M, Fitzpatrick R. Qualitative research in systematic reviews. *BMJ* 2001; 323: 765-766
- Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O, Peacock R. Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social Science and Medicine* 2005; 61: 417-430.
- Harden A, Garcia J, Oliver S, Rees R, Shepherd J, Brunton G, Oakley A. Applying systematic review methods to studies of people's views: an example from public health research. *Journal of Epidemiology and Community Health* 2004; 58: 794-800.
- Pawson, R. Evidence-based policy: the promise of 'realist synthesis'. *Evaluation* 2002; 8: 340-358.
- Pawson R. *Evidence Based Policy: A Realist Perspective*. London (UK): Sage Publications, 2006.
- Pearson, A, Field, J, Jordan, Z. *Evidence-based Clinical Practice in Nursing and Healthcare: Assimilating Research, Experience and Expertise*. Oxford (UK): Blackwell, 2007.
- Petticrew M, Roberts H. *Systematic Reviews in the Social Sciences: A Practical Guide*. Oxford (UK): Blackwell, 2006.
- Pope C, Mays N, Popay J. *Synthesising Qualitative and Quantitative Health Research: A Guide to Methods*. Maidenhead (UK): Open University Press, 2007.
- Popay J (Ed). *Moving beyond Effectiveness in Evidence Synthesis: Methodological Issues in the Synthesis of Diverse Sources of Evidence*. London (UK): NICE, 2006.
- Roberts K, Dixon-Woods M, Fitzpatrick R, Abrams K, Jones D. Factors affecting uptake of childhood immunisation: a Bayesian synthesis of qualitative and quantitative evidence. *The Lancet* 2002; 360: 1596-1599.
- Webb C, Roe B (Eds). *Reviewing Research Evidence for Nursing Practice*. Oxford (UK): Blackwell, 2007.

20.6.6 Critical appraisal of qualitative studies

- Blaxter M. Criteria for evaluation of qualitative research. *Medical Sociology News* 1996; 22: 68-71.

CASP (Critical Appraisal Skills Programme). 10 Questions to make sense of qualitative research [2006]. Available from: <http://www.phru.nhs.uk/pages/phd/resources.htm> (accessed 1 January 2008).

Dixon-Woods M, Shaw RL, Agarwal S, Smith JA. The problem of appraising qualitative research. *Quality and Safety in Healthcare* 2004; 13: 223-225.

Elder NC, Miller WL. Reading and evaluation qualitative research studies. *Journal of Family Practice* 1995; 41: 279-285

Forchuk C, Roberts J. How to critique qualitative research articles. *Canadian Journal of Nursing Research* 1993; 25: 47-55.

Horsburgh D. Evaluation of qualitative research. *Journal of Clinical Nursing* 2003; 12: 307-312.

Malterud K. Qualitative research: standards, challenges, and guidelines. *The Lancet* 2001; 358: 483-488.

Popay J, Rogers A, Williams G. Rationale and standards for the systematic review of qualitative literature in health service research. *Qualitative Health Research* 1998; 8: 341-351.

Secker J, Wimbush E, Watson J, Milburn K. Qualitative methods in health promotion research: some criteria for quality. *Health Education Journal* 1995; 54: 74-87.

Spencer L, Ritchie J, Lewis J, Dillon L. *Quality in Qualitative Evaluation: A Framework for Assessing Research Evidence*. London (UK): Government Chief Social Researcher's Office, 2003.

Vermeire E, Van Royen P, Griffiths F, Coenen S, Peremans L, Hendrickx K. The critical appraisal of focus group research articles. *European Journal of General Practice* 2002; 8: 104-108.

20.6.7 Web sites

(Accessed 1 January 2008)

Campbell Collaboration

A Campbell Review can include evidence from studies of the implementation of an intervention.

- www.campbellcollaboration.org

Centre for Reviews and Dissemination (CRD), University of York, UK

In addition to a handbook, CRD has an online resource centre.

- www.york.ac.uk/inst/crd

Evidence for Policy and Practice Information and Coordinating (EPPI) Centre

The EPPI Centre provides links to methods, tools and databases.

- eppi.ioe.ac.uk/cms

Joanna Briggs Institute (JBI)

JBI offers a variety of evidence-based healthcare resources concerning the synthesis of evidence.

- www.joannabriggs.edu.au

National Institute for Health and Clinical Excellence (NICE)

NICE has produced guidance on methods for development of NICE public health guidance which incorporate diverse study designs.

- www.nice.org.uk

Social Care Institute for Excellence (SCIE)

SCIE has produced guidance on the conduct of knowledge reviews which incorporate diverse study designs.

- www.scie.org.uk