How to appraise a qualitative study

Qualitative research is increasingly being published in medical journals to explore important clinical questions. Methods, vocabulary and theoretical underpinnings may be unfamiliar to some doctors. This article explores an approach to understanding qualitative studies.

Qualitative research is being published more frequently in medical journals (Kuper et al, 2008b). It is being used to explore important clinical questions that improve patient care (Greenhalgh and Taylor, 1997), but its methods, vocabulary and theory may be unfamiliar. Being able to appraise qualitative research is an important skill and an approach is outlined here, beginning with a definition, then outlining some theoretical underpinnings and concluding with considerations for appraising each section of a qualitative paper, together with some general points.

What is qualitative research?

Qualitative research is a heterogeneous group of methodologies with different theoretical underpinnings and different ways of conceptualizing knowledge (Kuper et al, 2008b). It is often defined with reference to quantitative research, but is more than 'the absence of numbers' (Greenhalgh and Taylor, 1997). It studies people in their natural context, and interacts with them using their language, rather than in artificial or experimental settings. It is concerned with how people make sense of and interpret their social world (Pope and Mays, 2006).

Theoretical underpinning of qualitative research

The traditional theoretical divide in qualitative and quantitative research follows different basic beliefs on the nature of reality and knowledge, termed constructivism and positivism (Reeves et al, 2008; Paley and Lilford, 2011).

- Positivism is exemplified by the 'scientific method', with objectivity, hypothesis testing and search for a single objective truth (Kuper et al, 2008b). Positivist research is usually undertaken in health care using quantitative methods, including randomized controlled trials
- Constructivism describes a view of reality that it is socially constructed by our individual social, and historical contexts and so there is no absolute shared truth but 'multiple subjective realities'. It is a common philosophical theory behind qualitative methods (Paley and Lilford, 2011).

Doctors may be seen as positivists, with the hierarchy of evidence-based medicine, and at the top the randomized controlled trial or the meta-analysis of randomized controlled trials. Many doctors, however, also recognize the complexity of the patient–doctor interaction, beyond the simple biological into psychosocial and spiritual, individual and subjective; it is an old adage, but medicine is as much an art as a science (Saunders, 2000).

Use of qualitative research in health care

It has been suggested that the theoretical divide between the two types of research is not as wide as was traditionally thought (Paley and Lilford, 2011). There was an initial scepticism about qualitative research as a 'soft' science, especially in medical journals used to quantitative research and the positivist perspective (Pope and Mays, 2009). These criticisms were that qualitative research is too subjective, has small sample sizes, is difficult to generalize and lacks transparency. It is now, however, increasingly published in medical journals (Kuper et al, 2008b).

Qualitative research methods can be seen as different items in the 'toolkit' of research methods, appropriate for answering different sorts of questions (Paley and Lilford, 2011). In general, quantitative research focuses on 'what?', 'how much?' and 'why?' questions, and qualitative research 'why?' and 'how?' (Kuper et al, 2008b). For example, qualitative research may be used to explore why patients do not take their prescribed medication, rather than testing the effectiveness of the medication, which would be more appropriately measured in a randomized controlled trial. The strength of qualitative research lies in the depth and richness of the data, and that the data are occurring in a natural context. It is not more or less 'valid' or 'credible' than quantitative research.

General considerations for appraising qualitative research

As with all research, there are poorly conducted or written qualitative studies (Pope and Mays, 2009).

> **'...all research is selective, there is no way that the researcher can in any sense capture the literal truth of events' (Mays and Pope, 1995).**

It is important to have the skills to appraise qualitative studies, rather than either reading them 'at face value' or dismissing all qualitative studies as not valid because they

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have been assessed from a positivist viewpoint. Often when critically appraising research studies external checklists or criteria are used to evaluate the paper. There are checklists designed for use specifically with health-care qualitative research (Mays and Pope, 1995; Greenhalgh and Taylor, 1997; Giacomini and Cook, 2000a,b; Kuper et al, 2008a); as well as more general checklists (Spencer et al, 2003) or criteria from textbooks of qualitative research methods (Corbin and Strauss, 2008; Silverman, 2010b). The uncritical use of these tools without any theoretical understanding of qualitative research would result in a narrow evaluation of a paper, for example from a positivist perspective. They may have resulted in authors adding information to papers to make sure they fit the checklist, which Barbour (2001) describes as 'the tail wagging the dog'.

For the purposes of this article, a specific checklist will not be provided, but each part of the process of conducting and describing the research will be discussed, concluding with some general considerations.

Specific considerations for appraising a qualitative study

Research question or objective

Examine why the research has been done and whether it is exploring a clinically important research question (Greenhalgh and Taylor, 1997). Qualitative research tends to be iterative and deductive, altering the research methods and aim as the study progresses, in the light of information gleaned along the way (Greenhalgh and Taylor, 1997; Kuper et al, 2008a). This is a strength as it allows flexibility and sensitivity to the richness and variability of the subject matter. However, the research aim should be clearly defined and not too broad so it is achievable, and the iterative process should be clearly described and transparent.

Methods: setting and sampling

A credible method is one in which the reader is given sufficient information to understand how the research took place and in comparison to quantitative methods, it usually needs to be lengthy and discursive (Greenhalgh and Taylor, 1997).

Setting

This should be described in sufficient detail to determine the context of the research and its relevance to the reader.

Reflexivity

The researcher's perspective should be described as it directly influences each stage of the research, from the research question, data collection and analysis to deciding what to publish. In contrast with quantitative research, the aim is not to reduce or exclude this 'bias'; the term bias implies that there is a single true reality that the bias is preventing from being revealed. Qualitative researchers generally believe that 'reality' is socially constructed and there are multiple subjective realities. In the qualitative paradigm, the goal is to understand, not erase, differing perspectives and influences (Kuper et al, 2008b). Qualitative researchers need to be sensitive to the way in which they and the research process have shaped the data, a process known as reflexivity.

Sampling

Theoretical sampling, where the sample is based on the relevance to the research question, is often used in qualitative research (Silverman, 2010a). The researchers select patients based on the groups or individuals the research question wishes to understand. This is in comparison to the random sampling of quantitative research, which seeks to represent the overall population from which the sample is drawn. However, the sampling method needs to be justified by the researchers based on the question or aim of the study (Greenhalgh and Taylor, 1997). It should then be reflected in later parts of the study, such as the analysis (Barbour, 2001). Small numbers are generally appropriate, and indeed if numbers of subjects are too large, the richness and thick descriptions may be compromised (Mays and Pope, 1995).

Data saturation

Where data are collected and analysed until no new major themes occur is often used to explain sampling size, but ideally this still requires a clear explanation of how that decision was made (Kuper et al, 2008a).

Data collection

There are multiple methods of data collection in qualitative research, including interviews, focus groups, fieldnotes from observation and documentary sources such as diaries or policy documents. It has been suggested that manufactured data (such as interviews) focus on how social reality is constructed rather than social reality per se. No data are intrinsically unsatisfactory but the reason for selecting the type of data should be articulated and relevant to the research question (Silverman, 2007a). A criticism of medical qualitative research is that it commonly just uses the semi-structured interview without any explanation or justification (Pope and Mays, 2009).

Analysis

Once obtained, the data are usually converted to text – for example, an interview transcript. Following this, the researchers systematically analyse the data, usually by coding and comparing the codes between and within cases. Particular attention should be paid to 'negative' or 'deviant' cases, where the researchers' explanatory scheme appears weak or is contradicted by the evidence (Mays and Pope, 1995). Most importantly, they need to be transparent about what they have done and justify their approach (Greenhalgh and Taylor, 1997). Various 'quality control measures' have been suggested but, as discussed in the section on checklists, their use is debated (*Table 1*) (Barbour, 2001).

Table 1. Definitions of techniques used in analysis to improve rigor: as discussed in the text their use is contested by some authors

Multiple coding	More than one researcher independently coding the data. In practice it may be difficult for researchers to be independently assigning the same meaning to data (Greenhalgh and Taylor, 1997), and it is more useful in encouraging thoroughness in integrating the data and alerting to possible alternative interpretations (Barbour, 2001)
Triangulation	More than one method of data collection (quantitative or qualitative) to answer the research question. However, it may be more useful if seen as complementary rather than competing perspectives, and the term 'crystallisation' has been suggested as an alternative term to 'triangulation' (Barbour, 2001)
Responder validation	Research participants feeding back on emerging findings. However, researchers and participants may have differing perspectives; in general researchers seek to provide an overview, whereas participants have individual concerns (Barbour, 2001)

Are the findings credible, with appropriate conclusions and justified by the results?

In qualitative research, it is not possible to separate results and interpretation, as the results are by the nature of the research interpretation of the data. Often they are described together under the heading 'findings' rather than the traditional 'results' and 'discussion' headings. Reference to actual data such as verbatim quotes may help illustrate findings and the findings should flow from what was found in the field (Greenhalgh and Taylor, 1997). Some propose that an audit of transcripts should be made available for independent verification of findings, but others argue that reflexivity, transparency and accepting and understanding multiple perspectives is more important than reproducibility (Kuper et al, 2008b).

Use of theory

As well as the grand theory of how knowledge is produced, such as constructionism, mid-range theory is important in qualitative research (Reeves et al, 2008). Theories provide conceptual understanding of complex topics and provide a 'lens' through which to look at the data and provide a framework for analysis (Reeves et al, 2008). It is important that the existing theory is incorporated throughout the article, for example its influence on the research question and the sampling strategy, as part of reflexivity. Often it is only included in the findings or conclusions, making its role less transparent as it may well have had influence beyond this. Many qualitative researchers perceive that the use of theory is what differentiates qualitative research from anecdotes or journalism (Reeves et al, 2008). However, some health-care professionals may have difficulty integrating theory into research, finding the language of qualitative research with its 'isms' and lack of plain English difficult to understand (Pope and Mays, 1993, 2009). Theory can mean the research literature relating to the topic (Bryman, 2008), a concept more familiar and perhaps more acceptable or credible to health-care researchers.

Transferability: does it inform practice?

The findings of a qualitative study are not intended to be generalizable in the same way as the results of a quantitative study. They may, however, be transferable to other contexts. Theoretical sampling (Greenhalgh and Taylor, 1997) and descriptions of the setting and perspective can help readers assess their applicability to their own settings by a process called resonance (Kuper et al, 2008b). Qualitative findings may be used to inform a quantitative work (Pope and Mays, 2009). Study findings can also be used to extend or modify existing theories, beyond health care in other areas of social science (Kuper et al, 2008b).

Conclusions

Qualitative research has much to offer, as a means of exploring important questions, and in encouraging new questions not previously asked, both in clinical practice and in terms of wider questions such as how knowledge is produced. It helps the development of critical and reflexive skills, which are important for all clinicians. There are differences from quantitative research, but the differences are not always as vast as the theoretical distinction might suggest. Health-care professionals may find the language and the theories difficult (Kuper et al, 2008b) but with improved explanation, less 'highfalutin' theories' (Silverman, 2007b) and increasing transparency in conducting and writing qualitative research this area of research can have great benefits in improving patient care. **BJHM**

Conflict of interest: none.

KEY POINTS

- Qualitative research is an umbrella term for a heterogeneous group of methodologies with different theoretical underpinnings and different ways of thinking about knowledge.
- A common philosophical theory behind qualitative methods is constructionism, where there is no absolute shared truth but 'multiple subjective realities'.
- Familiarization with the methods, vocabulary and theory will aid understanding of this research.
- Qualitative methods are increasingly published in medical journals and are seen by some as different items in the 'toolkit' of research methodology and appropriate for answering different sorts of research questions.

Barbour RS (2001) Checklists for improving rigour in qualitative research: a case of the tail wagging the dog? *BMJ* **322**(7294): 1115–17

Bryman A (2008) Social research strategies. In: Bryman A, ed. *Social Research Methods.* Oxford University Press, Oxford: 3–28

Corbin JM, Strauss AL (2008) Criteria for evaluation. In: Corbin JM, Strauss AL, eds. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* Sage Publications, Inc London: 297–312

Giacomini MK, Cook DJ (2000a) Users' Guides to the Medical Literature XXIII. Qualitative Research in Health Care: A. Are the results of the study valid? Evidence-Based Medicine Working Group. *JAMA* **284**(3): 357–62

Giacomini MK, Cook DJ (2000b) Users' Guides to the Medical Literature XXIII. Qualitative Research in Health Care: B. What are the results and how do they help me care for my patients? Evidence-Based Medicine Working Group. *JAMA* **284**(4): 478–82

Greenhalgh T, Taylor R (1997) How to read a paper: Papers that go beyond numbers (qualitative research). *BMJ* **315**(7110): 740–3

Kuper A, Lingard L, Levinson W (2008a) Critically appraising qualitative research. *BMJ* **337**: 10.1136/bmj.a1035

Kuper A, Reeves S, Levinson W (2008b) An introduction to reading and appraising qualitative research. *BMJ* **337**: 10.1136/bmj.a1288

Mays N, Pope C (1995) Rigour and qualitative research. *BMJ* **311**(6997): 109–12

Paley J, Lilford R (2011) Qualitative methods: an alternative view. *BMJ* **342**: 10.1136/bmj.d1424

Pope C, Mays N (1993) Opening the black box: an encounter in the corridors of health services research. *BMJ* **306**(6873): 315–18

Pope C, Mays N (2006) Qualitative methods in health research. In: Pope C, Mays N, eds. *Qualitative Research in Health Care.* Blackwell, London: 1–11

Pope C, Mays N (2009) Critical reflections on the rise of qualitative research. *BMJ* **339**: b3425

Reeves S, Albert M, Kuper A, Hodges BD (2008) Why use theories in qualitative research? *BMJ* **337**: 10.1136/bmj.a1949

Saunders J (2000) The practice of clinical medicine as an art and as a science. *Med Humanit* **26**(1): 18–22

Silverman D (2007a) On finding and manufacturing qualitative data. In: Silverman D, ed. *A Very Short, Fairly Interesting and Reasonably Cheap Book about Qualitative Research.* SAGE, London: 37–60

Silverman D (2007b) The aesthetics of qualitative research: on Bullshit and Tonsils. In: Silverman D, ed. *A Very Short, Fairly Interesting and Reasonably Cheap Book about Qualitative Research.* SAGE, London: 119–44

Silverman D (2010a) Selecting a case. In: Silverman D, ed. *Doing qualitative Research: a Practical Handbook.* Sage Publications, London: 137–51

Silverman D (2010b) Evaluating qualitative research. In: Silverman D, ed. *Doing Qualitative Research: a Practical Handbook.* Sage Publications, London: 292–310

Spencer L, Ritchie J, Lewis J, Dillon L (2003) Quality in Qualitive Evaluation: A framework for assessing research evidence. www.civilservice.gov.uk/wp-content/uploads/2011/09/a_quality_framework_tcm6-7314.pdf (accessed 26 March 2013)