Reading and assessing qualitative research

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What makes doctors burn out? What is it like to have epilepsy? Why do smokers not give up? Qualitative research makes it possible to look behind the statistics and to study health and health care from the inside: to find out what it is really like for the health professionals who provide the care and for the patients on the receiving end.

INTRODUCTION

A previous paper in this series (Davies, 2000) discussed why it is important for health-care professionals and managers to be able to read and assess research reports critically and advised on how to carry out critical appraisal of quantitative research. This paper looks at the role and benefits of qualitative research and suggests how published reports might be assessed for their trustworthiness.

WHAT IS QUALITATIVE RESEARCH?

Qualitative research aims to explore the meaning and not the frequency of social phenomena (Easterby-Smith et al, 1991). The assumption behind qualitative research is that the way individuals see and interpret the world, and in turn how they behave, is affected by their attitudes, beliefs and preferences. This means that to understand human behaviour in a particular context, it is necessary to explore the individual's frame of reference and their definition of the situation. Qualitative research therefore studies people 'in the field' (in their natural settings) and collects naturally occurring data (Bowling, 1997).

According to Marshall and Rossman (1995), qualitative research entails:

> **'immersion in the everyday life of the setting chosen for study; values and seeks to discover participants' perspectives on their worlds; views inquiry as an interactive process between the researcher and the participants; is both descriptive and analytic; and relies on people's words and observable behaviour as the primary data.'**

While quantitative research can tackle questions about the safety of a particular drug, or how often an event occurs in a given population, qualitative research can contribute to a richer understanding of health care by tackling the 'why' and 'how' questions. For example, why do so many student nurses leave training? Why do some doctors oppose reductions in their working hours? And how do the media affect public perceptions of the medical profession? The distinctive methods of qualitative research make it particularly appropriate in certain research situations.

WHEN IS QUALITATIVE RESEARCH USED?

Qualitative research is useful when facing particular research challenges, e.g. when the issue being studied is particularly sensitive or when little is known about it (*Table 1*). It can stand alone or can complement or supplement quantitative research. For example, it can be used as a preliminary step to explore what questions and choice of responses should be given to respondents in a questionnaire, or when constructing a scale to measure opinions. It can also be used to explore in more detail the issues raised by a survey already conducted. (For example, why do 56% of respondents think that assisted conception should not be available on the NHS?) In tackling such issues, qualitative research uses a wide variety of data collection methods.

QUALITATIVE RESEARCH METHODS

The specific data collection methods used in qualitative research will depend on the purpose of the research and on the type of question(s) being explored (*Table 2*). Of all these methods, the most commonly encountered are direct observation and interviews. There are several useful texts that describe these methods in more detail (Easterby-Smith et al, 1991; Marshall and Rossman, 1995; Bowling, 1997).

TABLE 1.
What is qualitative research useful for?

Qualitative research can be used for:	Exploring new topics or areas about which little is known
	Dealing with sensitive/complex issues
	Generating hypotheses which can then be tested deductively
	Describing in words rather than numbers the qualities of social phenomena, e.g. caring for an elderly relative, unemployment, racial harassment
	Uncovering the nature of an individual's experience of a phenomenon, e.g. illness, bereavement, career transition

Derived from Strauss and Corbin (1990); Bowling (1997)

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Naturally, there are specific pitfalls associated with each data collection strategy, but nonetheless it is possible to give general guidance to assist in the interpretation of qualitative studies.

READING AND ASSESSING QUALITATIVE RESEARCH

One helpful way to determine the quality of a piece of research, and to assess whether its findings are worth further consideration, is to use a checklist to pose a variety of questions. As qualitative research is different in its nature and purpose from quantitative research, the kinds of checklists used to appraise quantitative research are unhelpful in assessing the quality of qualitative research. Because qualitative research has different aims and underlying assumptions, a different set of questions needs to be asked. For example, the common terms 'validity', 'reliability' and 'generalizability' mean different things when applied to quantitative and qualitative research, and therefore the reader needs to ask different questions of each (*Table 3*).

Set out below is a series of questions that could be used to assess the quality of a piece of qualitative research. The questions are given as a complete list in *Table 4* and are derived from various sources including Bowling (1997), Gray (1997), Greenhalgh (1997), Mays and Pope (2000) and Silverman (2000).

1. Was the research question worth asking?

Research may be useful and relevant when it either adds to knowledge or reinforces what has already been learnt (Mays and Pope, 2000). It must also satisfy the 'so what?' test. The researcher needs to persuade the reader that the study, however small, was worth doing. It might, for example, look at a common and significant problem in clinical practice, shed light on a new issue or complement an existing piece of research.

The specific research question might not have been finalized at the start of the research: qualitative research can often be an inductive and iterative process (Greenhalgh, 1997), and the research question may be modified along the way as the data collected substantiates or disconfirms preliminary assumptions or hypotheses. However, in describing what they have done, the researchers should make clear their central research question(s) and the steps that led to this point.

2. Was the theoretical framework clear?

The report should make clear how the study fits in to an existing body of knowledge or theory. Did the study aim to test the findings of earlier researchers or apply theory in a new

TABLE 2.
Methods of data collection in qualitative research

Direct observation: participant observer or non-participant observer
Interviews: semi-structured or unstructured
Focus groups: loosely structured interviews with a small group and a facilitator
Repertory grid technique: constructing a mathematical representation of an individual's perceptions
Cognitive mapping: a variation of the repertory grid technique, used with groups
Projective techniques: exploratory techniques which use stimuli (e.g. photos, drawings) to prompt individuals to 'project' their own meanings on to the stimuli and thus reveal aspects of their beliefs and feelings
Protocol analysis: seeking an individual's explanation of events shortly after an incident has occurred
Diary methods: structured or unstructured recording of events (e.g. activities, symptoms) by individuals

TABLE 3.
Questions of validity, reliability and generalizability

	Quantitative research	Qualitative research
Validity	Does an instrument measure what it is supposed to measure?	Has the researcher gained full access to the knowledge and meanings of informants?
Reliability	Will the measure yield the same results on different occasions (assuming no real change in what is to be measured)?	Will similar observations be made by different researchers on different occasions?
Generalizability	What is the probability that patterns observed in a sample will also be present in the wider population from which the sample is drawn?	How likely is it that ideas and theories generated in one setting will also apply in other settings?

Adapted from Easterby-Smith et al (1991)

TABLE 4.
Checklist of issues to consider when reading qualitative research

Was the research question worth asking?
Was the theoretical framework clear?
Was a qualitative approach appropriate?
Did the methods used meet the needs of the research question?
Was the researcher's perspective clearly stated and taken into account?
Was the context of the research clearly described?
Was the sampling strategy clearly described and justified?
Was the fieldwork clearly described in detail?
Was the analysis convincing and replicable?
How adequate was the discussion?

setting? For example, a case study of the introduction of new working practices for nurses in an outpatient clinic could be linked to theories about change management or build on theories about the operation of hierarchies in organizations.

3. Was a qualitative approach appropriate?

The nature of the research question determines whether naturalistic qualitative strategies were appropriate or whether quantitative methods should have been used instead. Testing the efficacy and safety of a new intervention would need quantitative methods while qualitative methods could be used to explore patients' attitudes towards the proposed new treatment. *Table 1* gives some indication of the areas of enquiry that are well-suited to a qualitative approach.

4. Did the methods used meet the needs of the research question?

The reader needs to have enough information to judge whether the specific data collection methods were a sensible and adequate way to address the research question (Greenhalgh, 1997). Good qualitative research is likely to use a variety of methods of data collection (and analysis). Triangulation compares the results of two or more methods of data collection (e.g. interviews and observation) or from two or more data sources (e.g. interviews with nurses from two different units), the aim being to make the data as comprehensive as possible (Mays and Pope, 2000).

5. Was the researcher's perspective clearly stated?

The close involvement of the researcher can be one of the strengths of qualitative research as it makes it possible to gather a much more detailed and in-depth description of complex social experiences. For example, a skilled and sensitive interviewer can develop a good rapport with interviewees, which enables them to share information that would otherwise not be disclosed.

The downside of this involvement is that there is a greater risk that observer bias will influence the results. This can work in both directions: the researcher may be predisposed to look for certain findings, and the research subjects may themselves be influenced by the researcher's status (e.g. if the researcher is one of the nurses caring for them). Good qualitative research builds in strategies to balance bias in interpretation (Marshall and Rossman, 1995) and makes explicit the theoretical perspective and values of the researcher(s) so that the findings can be assessed accordingly.

6. Was the context of the research clearly described?

The researcher should provide information about the context in which the research took place: e.g. the type and size of unit, how long the service had been running, any significant changes occurring at the time of the research (such as a merger of services or the development of a new programme). The timing of data gathering may also be relevant, e.g. pre-discharge or post-discharge assessments from patients.

This information is important both so that the reader can reflect on possible biases or confounding factors and also so that they can relate the findings of the study to other settings. In qualitative research, generalizability is likely to be conceptual rather than numerical (Green and Britten, 1998), which means that the reader needs to be able to assess how far the findings and the theories developed (e.g. about patients' attitudes towards early discharge from hospital) could translate to their own specialty, type of unit or area of concern.

7. Was the sampling strategy clearly described and justified?

Good qualitative research often uses a diverse range of individuals and settings to increase both the validity of the account (i.e. its closeness to the truth; Greenhalgh, 1997) and the generalizability of the research (its value elsewhere). As such, qualitative research is not concerned with obtaining representative samples in the statistical sense: the objective is to look at why people behave as they do and not to estimate the proportion of individuals who hold a particular view (Crombie and Davies, 1996; Marshall, 1996). It is therefore legitimate in qualitative research to seek out deliberately a group of individuals who fit the characteristics of the situation being researched (e.g. health service managers who previously worked in private industry).

Three broad approaches to sampling have been identified (Marshall, 1996):

1. The convenience sample
2. The judgment/purposeful sample
3. The theoretical sample.

The research question and the type of data analysis envisaged will determine the relative balances between these approaches, but convenience sampling alone (taking the first few individuals who happen to come along) is likely to lead to weaker accounts and limited generalizability. In all cases, the sampling strategies need to be made explicit so that the reader can judge their appropriateness.

8. Was the fieldwork clearly described in detail?

Data collection should be systematic and should be described in sufficient detail so that it would be possible for another researcher to repeat each stage. Problems encountered during data collection (e.g. refusals to participate leading to under-recruitment) which resulted in modifications to the original plan should be explained. Relevant documents (e.g. a standard letter inviting patients to participate in the study) should either be included within the research report or be readily available.

9. Was the analysis convincing and replicable?

Methods of analysis of qualitative research are dealt with in detail in several texts (Strauss and Corbin, 1990; Marshall and Rossman, 1995; Pope et al, 2000; Silverman, 2000). The first key issue for the reader is: how systematic was the analysis? Was the coding of data carried out according to an explicit set of rules that clearly describe the categories used and the criteria for inclusion/exclusion? Is there sufficient evidence that the interpretation was based on the data and was not merely impressionistic or partial, with the

investigator simply extracting and reporting on those data that supported their hypotheses (Bowling, 1997)? Some authors suggest that the research report should contain enough of the raw data to help the reader make this judgment (e.g. Bowling, 1997), although, of course, this is difficult in short papers and it still does not preclude selective inclusion.

The issue of whether or not more than one data collector and/or analyst should be used is debatable and clearly has resource implications. However, multiple researchers may be helpful in situations where bias is particularly likely to be a problem (Pope et al, 2000).

10. How adequate was the discussion?
The discussion should set out clearly how the links were made between data, theories and conclusions. The reader needs to decide how well the analysis succeeded in incorporating all of the observations, e.g. whether there was adequate discussion of the evidence for and against the researcher's arguments and whether sufficient attention was given to the analysis of deviant cases (those that appear to contradict the emerging explanations; Mays and Pope, 2000). Finally, the discussion should acknowledge any limitations of the study.

CONCLUSIONS

Qualitative research can add much to a broad understanding of health care. It is different in both form and intent from quantitative research, and critically appraising it can be more difficult. Asking a series of key questions can help readers assess the quality of a piece of qualitative research and whether or not to apply its findings in their own practice. **HM**

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KEY POINTS

- Qualitative research, like any research, should be assessed for its trustworthiness (internal validity) and its generalizability (external validity).
- Qualitative research seeks to go beyond and behind surface descriptions of phenomena; to describe and explain phenomena from the participants' perspectives and from within naturalistic contexts.
- Qualitative methods are diverse, and each has particular strengths, areas of application and pitfalls.
- Because of the different intent and nature of qualitative research, different criteria for assessment should be applied than those usually used for quantitative methodologies.
- Engagement with ten key questions (*Table 4*) can greatly assist a structured critical appraisal of published qualitative research.