So you want to do research? 3. An introduction to qualitative methods

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The past decade or so has seen an increase in the use of qualitative research in the social sciences in general. However, in the health field – with its traditional emphasis on quantitative research methods including randomized controlled trials and experimental methods – the application of qualitative research methodology has been less progressive. One possible reason for this is that qualitative research is often viewed as being unscientific and lacking rigour and that its findings are not generalizable (Mays and Pope, 1995). However, in a climate of ever-increasing complexity in the provision of health care, health professionals’ work and of related organizational and cultural changes, traditional quantitative methods are not always the most appropriate for dealing with questions that investigators are now asking.

The aim of this article is to introduce some of the key issues in qualitative research, starting with a description of qualitative research and the two main methods for collecting qualitative data, through to an overview on the analysis of qualitative data, ensuring rigour and the appropriate reporting of the research findings.

Choosing the appropriate methodology

Research methodologies can be broadly categorized into either qualitative or quantitative. Qualitative research focuses on the use of standardized methods (e.g. questionnaires) to collect information, which is then transformed, into numbers to enable some statistical analysis. The aim of qualitative research is to help in the understanding of social phenomena in a natural rather than an experimental setting with an emphasis on the meanings, experiences, attitudes and views of the participants rather than providing quantified answers to a research question (Hoinville and Jowell, 1978; Pope and Mays, 1995). Data obtained from qualitative research are usually in the form of words rather than numbers and these words are based on observation, interviews or documents (Miles and Huberman, 1994). Qualitative data can also include still or moving images.

Miles and Huberman (1994) have identified a number of recurring features of qualitative research. These include:

- The researcher’s role to gain a holistic overview of the context under study
- To capture data on the perceptions of local ‘actors’ (individuals) from the inside
- That most analysis is done with words
- That relatively little standardized instrumentation is used.

ABSTRACT

This article describes some of the key issues in the use of qualitative research methods. Starting with a description of what qualitative research is and outlining some of the distinguishing features between quantitative and qualitative research, examples of the type of setting where qualitative research can be applied are provided. Methods of collecting information through in-depth interviews and group discussions are discussed in some detail, including issues around sampling and recruitment, the use of topic guides and techniques to encourage participants to talk openly. An overview on the analysis of qualitative data discusses aspects on data reduction, display and drawing conclusions from the data. Approaches to ensuring rigour in the collection, analysis and reporting of qualitative research are discussed and the concepts of credibility, transferability, dependability and confirmability are described. Finally, guidelines for the reporting of qualitative research are outlined and the need to write for a particular audience is discussed.
Collecting the information

As already pointed out, qualitative research meets different objectives from those of quantitative research and as a consequence provides a very different type of information. This information is often unstructured, unwieldy and, more often than not, consists of verbatim transcripts from discussions with the respondents, field notes and other written documents (Ritchie and Spencer, 1994).

The principal methods of obtaining qualitative data are the research interview and/or group discussion (also known as focus groups). There are three main types of interview: structured, semi-structured and in-depth. Structured interviews ask standardized questions with predetermined responses, e.g.:

- ‘How would you rate your overall health over the past 7 days? Excellent Good Fair Poor’

Semi-structured interviews are conducted using a loose structure of open-ended questions which define the area to be explored and which the respondent can answer in his or her own words: e.g. What would you describe as good health?

In-depth interviews, also known as unstructured interviews, are the least structured and are the main method used in qualitative research for obtaining information.

**In-depth interviews**

In-depth interviews should be flexible, interactive and responsive. The questions should also be worded to encourage respondents to provide a detailed response in their own words. Good questions in qualitative research should be open-ended, neutral, sensitive and clear to the interviewee and can be based on behaviour or experience, opinion or value, feeling, knowledge and sensory experience (Patton, 1987).

The process of undertaking an in-depth interview can and preferably should be facilitated through the use of a topic guide. This is simply a list of topics or themes and sub-themes to be explored during the interview. How these topics and themes are phrased as questions is normally at the discretion of the interviewer. However, care should be taken when framing the questions to ensure they are comprehensible to the respondent.

The topic guide is just that, and should not be used in a way that restricts the flexibility and interactive nature of the interview or responsiveness of the respondents’ answers. The interview should be conducted in such a way to enable spontaneous emergence of topics that might not have been previously considered relevant by the researcher.

Encouraging people to speak freely and at length about themselves or their situation is an essential requirement of qualitative research,
which can be achieved through the personalization of the discussion. For example rather than asking about waiting times in general, or problems in getting access to GPs, respondents should be asked about their own experiences of waiting times or registering with their local GP.

Both verbal and non-verbal cues can also help in encouraging the respondent to talk openly. The use of a simple ‘mmm’ or ‘uh-huh’ or ‘I see’ shows understanding and interest, which can stimulate discussion. Respondents can also be asked probing questions (‘probes’) to encourage them to provide more depth or detail, for example ‘How did you feel when you were told that you would have to wait 6 months for an appointment?’.

Another approach is to repeat the expression made by the respondent. For example: ‘You said you felt very angry when told…’?, which can be followed by an expectant pause to encourage a response.

It is important to make clear the distinction between probing and prompting. For example: ‘Did you feel very angry when you were told you had to wait 6 months before you could have the operation?’ is prompting the respondent to say something not in his or her own words. This is very different from reflecting the respondent’s comment back at them: e.g. ‘You said that you felt very angry. Can you tell me why?’.

Non-verbal cues to encourage openness in the respondent include taking an open and relaxed posture, making good eye contact and nodding of the head to indicate interest or understanding.

The optimal length of an in-depth interview is dependent on a number of factors, which include the resources and time available to carry out the interviews, the depth of enquiry and age of the target group. Interviews over 1½–2 hours are likely to be getting close to the limit when fatigue sets in for both the interviewer and interviewee.

Carrying out qualitative interviews requires a considerable amount of skill and it cannot be assumed that clinical skills are transferable to achieve this. Maintaining control of the interview is essential, for example in dealing with verbose interviewees, but it is also important to choose the appropriate degree of directiveness to maintain that control. Some of the common pitfalls in interviewing include: jumping from one subject to another, giving interviewees medical advice, offering one’s own perspective – so possibly biasing the interview, and asking embarrassing or awkward questions (Field and Morse, 1989).

For a more detailed discussion on conducting in-depth interviews, see Burgess (1984), Bryson and Burgess (1990), Gilbert (2001), Robson (2002).

Group discussions (focus groups)

Group discussions can be cheaper and quicker to organize than individual interviews with the same number of respondents. Group discussions are usually led by one or two moderators, whose task is to ask open questions to the group as a whole, to encourage group members to discuss the issues of interest to the researchers, and manage the whole process. The moderators should ensure that every member of the group speaks as well as preventing over-talkative participants from dominating the discussion and that participants keep to the topic. The moderator should, wherever possible, interfere as little as possible in the discussion, other than summing up occasionally the views expressed and feeding this back to the group. The moderator should also stimulate further discussion by highlighting inconsistencies in the views put forward by the group.

For a more detailed discussion on setting up and running a group discussion see Morgan (1997), Krueger and Casey (2000), Gilbert (2001), Robson (2002).

As with in-depth interviews, a topic guide should be used but might be much shorter to enable the moderator to rapidly review the range of topics during the discussion. Group discussions should probably not exceed 2 hours in length for the same reasons as interviews. If possible group interviews should be audio-recorded to facilitate transcribing of the discussion.

While a considerable amount of detailed information can be obtained from group discussions comprising, for example, eight participants, it is likely that the detail will not match that obtained from eight separate in-depth interviews. As a consequence they are less suitable than in-depth interviews when the objective is to develop hypotheses and identify personal motivations (Hoynville and Jowell, 1974).

Sampling and recruitment

As the aim of qualitative research is to identify the different behaviours and attitudes of participants in relation to a particular subject, it is important that the participants for in-depth interviews and discussion groups are selected purposively so as to represent a wide spectrum of these views and experiences and to cover the full range of subgroups so as to identify, explore and explain variations in the nature of views and experiences between them (Hoynville and Jowell, 1978).

While there appear to be no formal rules regarding the recruitment of participants for group discussion work, groups usually comprise around six
to eight respondents who are selected purposively to ensure coverage of the range of behaviours, experiences, values and attitudes relevant to the topic under study. More than ten participants can make managing the group difficult (Krueger and Casey, 2000).

When selecting group participants there should be sufficient similarity between participants to ensure that they feel confident in being open about their views and experiences, but there should also be some diversity to stimulate debate (Hoinville and Jowell, 1974).


**Ethics and consent to participate**

Any research involving the use of human subjects either directly or indirectly, must receive ethics approval. This will generally mean submitting to the ethics committee, details of the research, including who will take part in the research, what the research will comprise, issues of data protection and confidentiality, such as how data collected will be stored and who will have access to it. Copies of any questionnaires scales, tests and interviews schedules and topic guides that will be used in the study will also have to be reviewed by the ethics committee. It is also worth bearing in mind that it is now common practice that journals, before publishing research studies, need to be assured that ethics approval has been granted for the research. Ethics committees will also need to see evidence on how informed consent from the study participants will be obtained and issues such as the ability of participants to give consent, including mental ability, age, level of literacy and language etc will be addressed.

**Conducting the analysis**

A detailed discussion on how to conduct the analysis of qualitative data is beyond the scope of this article, but a number of very good books are available which provide in-depth discussions of the topic (e.g. Miles and Huberman, 1994; Bryman and Burgess, 1993; Gilbert, 2001; Robson, 2002).

Essentially, qualitative data analysis is about detection – defining concepts and understanding internal structures; categorising, e.g. the different type of behaviours or attitudes; theorising – seeking explicit or implicit explanations; and exploration – e.g. finding associations between behaviours and attitudes and mapping the range and nature of the phenomena under study (Ritchie and Spencer, 1994). Miles and Huberman (1994) defined analysis of qualitative data as three flows of activity, which are data reduction, data display and drawing conclusions/verification.

**Reducing the data**

This is the process whereby the information in the form of field notes and transcripts from the interviews and or group discussions is simplified and transformed. This can often be through coding of the data, e.g. identifying specific groups or types of behaviour or attitudes, but also includes the writing of summaries and identifying themes within the data. The data reduction or transforming process should continue throughout the study until the final report has been written and should not be seen as a separate function from analysis but as a part of it.

Essential to the process of data reduction is the need for the researcher to become very familiar with the type, range and diversity of the data. This will involve the full ‘immersion’ of the researcher in the data – listening to tapes, reading transcripts and studying field notes – which will allow the researcher to conceptualize and put into some context any hunches or emergent themes which were formed during data collection.

**Data display**

As a word-based methodology, the commonest approach to displaying qualitative data has been as text. However, data displays can also include charts, graphs, matrices and networks. Through the use of these forms the range and nature of the phenomena can be mapped, typologies created and associations plotted in a systematic way (Miles and Huberman, 1994). The aim of displaying the data is to build a picture of the data as a whole to aid systematic and self-conscious analysis. It should be seen as part of the analysis, with data reduction and display interlinked and building on one another.

**Drawing conclusions/verification**

It is likely that throughout the whole process of analysis the researcher is drawing conclusions about what things mean, the different patterns, regularities and explanations. The final conclusions should however, only be drawn once data collection is over. Drawing conclusions is only half the story as conclusions need to be verified (Miles and Huberman, 1994). Ensuring rigour in qualitative research and the integrity is part of that verification process.
Ensuring rigour in qualitative research

A common criticism of qualitative research is that it lacks scientific rigour and in contrast to the traditional biomedical approach of using quantitative research, lacks reproducibility and generalizability and is considered little more than a collection of anecdotes and personal impressions (Mays and Pope 1995). Much of this criticism results from the different approaches of qualitative and quantitative research and their ability to ensure the reliability and validity of their findings. All research methods, however, have their strengths and weaknesses. For example, there is a considerable amount of research that shows that the intended meaning of a survey question is not always universally shared among all respondents (Meadows et al, 2000). Equally, how can a researcher ensure that his or her presence in some way has not biased or influenced the observed behaviour?

Quantitative research, unlike qualitative research, is able to produce statistical models and report statistically significant findings. These may or may not be fully justified, but do seem to provide some truth-value to the findings in terms of their reliability and validity. However, as with qualitative research, this will depend on the skills of the researcher, the appropriateness of the question asked and the methods used to answer it. It is not at all clear that the same concepts of reliability and validity can or should be applied to qualitative research, which uses different methods and collects different data. Nevertheless, there should be some practical standards that can be used to judge the quality of the conclusions from qualitative research.

Lincoln and Guba (1985) made a strong case that the conventional criteria applied to quantitative data were inappropriate in assessing qualitative research. They proposed that the concepts of internal and external validity (generalizability), reliability and objectivity be replaced by alternatives that reflect more faithfully the underlying assumptions of qualitative research, notably credibility, transferability, dependability and confirmability.

Miles and Huberman (1994) provide a detailed description of each of these concepts together with examples of relevant queries, which are summarized here:

- Credibility: Do the findings of the study make sense? Are they credible to the people we study and our peers? Relevant queries: How context-rich are the descriptions? I.e. How much are the descriptions embedded into the specific context of the study? Are the findings generally consistent with one another, are they internally coherent?
- Transferability: Do the conclusions of the study have a greater import? How far can they be generalized? Are they transferable to other contexts? Relevant queries: Are the characteristics of the sample, setting and processes fully described? Is the sample sufficiently diverse enough to encourage broader applicability?
- Dependability: Is the process of the study consistent, stable over time and across researchers? Relevant queries: Are the research questions clear and is the study design appropriate for them? Were data collected across the full range of settings, times and respondents as suggested by the research question?
- Confirmability: Is the research reasonably free from unacknowledged researcher bias? Relevant queries: Are the study’s general methods and procedures explicitly described and detailed? Can we follow the actual sequence of how the data was collected, processed, transformed and displayed?

As with quantitative research, the strategy is to ensure that the rigour in qualitative research is systematic and self-conscious. In doing so the researcher should seek to provide an account of the methods and data which can stand independently and which is a plausible and coherent explanation of the topic under study along the lines described here. As a process qualitative research needs to be well documented.

For further reading on issues of rigour in research see Sandelowski (1986) and Koch and Harrington (1998).

Reporting findings

Strategies for reporting and publishing research findings must be considered from the earliest stages of a research project. Dissemination of research is essential if the findings are to be of benefit to others, be open to critical examination by professional peers and promote service development based on sound evidence. Approaches to reporting qualitative data will be examined alongside approaches for quantitative data in a later paper in this series.

One important aspect of reporting the findings from qualitative research is that on no account should the data undergo statistical analysis or be quantified in any way, no matter how tempting this may be. Of course it is perfectly acceptable to report how many women and men or GPs for example, took part in the study, but it is important to remember that the findings from qualitative
research are based on the analysis of the narrative of individual experiences and that study participants for qualitative research have not been selected to be statistically representative of the population under study, but to provide variations in the nature of their views and experiences. So statements such as ‘x% of respondents experienced strain and worry resulting from caring for family members’ should be avoided and more appropriately described, for example, as: ‘Caring for family members was seen by some respondents to be a considerable strain and worry’ (Fenton and Karlson, 2002).

**Conclusion**

This necessarily brief overview has attempted to describe the ethos and practice of qualitative research. Contrary to popular belief, qualitative research is not ‘easier’ or ‘softer’ than quantitative research. It requires planning and care in its execution, and calls on a wide range of skills. Novice researchers are strongly encouraged to discuss planned research with an experienced researcher, in order that they get the most out of the process and the data collected.


Lincoln YS, Guba EG (1985) *Naturalistic Inquiry*. Sage, Beverly Hill CA

Mays N, Pope C (12995) Qualitative research: rigour and qualitative research. *BMJ* 311: 109–112


**KEY POINTS**

- The aim of qualitative research is to help us understand social phenomena in a natural setting through the analysis of the meanings, experiences, attitudes and views of the participants.
- As with quantitative research the strategy is to ensure that the rigour in qualitative research is systematic and self-conscious.
- More often than not the method through which qualitative data is obtained is the research interview and or group discussion.
- Concepts of internal and external validity (generalizability), reliability and objectivity should be replaced by alternatives, which reflect more faithfully the underlying assumptions of qualitative research, notably: credibility, transferability, dependability and confirmability.
- As with quantitative research it is essential to ensure that the rigour in qualitative research is systematic and self-conscious.