

Qualitative research articles: information for authors and peer reviewers

Resources

Ressources

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Qualitative research has begun to appear in medical journals with increasing frequency over the past few years and marks a distinct departure from a long tradition of quantitative research. The reasons for this are probably severalfold. Over the past 25 years there has been a growing recognition that unhealthy behaviours are risk factors for disease. For example, lifestyle modification is now central to the prevention of heart disease,¹ and only recently has the impact of lifestyle and behaviour been measured in relation to death from cancer.² Peoples' habits and behaviours are often congruent with their social and cultural milieu. Therefore, simply providing information on the negative consequences of certain behaviours is rarely enough to incite people to change.

Traditional, quantitative research, although excellent at documenting pathophysiologic change, offers little information about social and psychological dynamics. Qualitative research, designed to observe social interaction and understand the individual perspective, provides insight into what people's experiences are, why they do what they do, and what they need in order to change. As qualitative researchers Pope and Mays describe it, qualitative research is "reaching the parts other methods cannot reach."³ This "part" is making an important contribution to our understanding of health, the illness experience and effective health care.

Much has been written on how to conduct and evaluate qualitative research,³⁻⁹ yet little has been written on how to report it, especially in the context of a medical journal. The goal of this paper is to offer advice to authors on how to report qualitative studies, and to provide criteria for reviewers on how to identify a well-reported study. We have developed a checklist (Table 1) that synthesizes criteria proposed elsewhere,^{4,10,11} includes common criteria for any type of research reported in a medical journal and incorporates recommendations offered from experts in the field obtained from pilot-testing the checklist.

Given that there is a wide range of methods in qualitative research, and much debate about what constitutes quality in qualitative research,^{4,12,13} we have endeavoured to create an "inclusive" guide that incorporates a spectrum of approaches and methods.

General comments

Since qualitative research is still relatively new in the medical literature, there is great variation in how it is reported, how much explanation is given for the different terms inherent in qualitative research, how much detail is provided in describing the methods and findings, and how long the report is.

Before starting to write, it is always advisable to review the "Uniform requirements for manuscripts submitted to biomedical journals"¹⁴ and the respective journal's instructions for authors (*CMAJ*'s instructions appear on page 78 of the July 1, 1997, issue).

At *CMAJ* the recommended word count for qualitative research articles is 3500 words, which is longer than the word count for other types of original research but still a challenge to meet when a detailed description, including direct quotes, is called for. Table 2 offers a suggested breakdown of the total word count for the different sections of a qualitative research report; this gives an initial indication of the

level of detail expected in each section. More specific advice for each of the sections is provided in the next section.

The general medical readership is still unfamiliar with many of the concepts and terms used in qualitative research. Although it would be too lengthy for authors to provide a detailed explanation for such terms as “hermeneutics,” “triangulation,” “snowball sampling” and “the iterative process,” it would be useful to provide a reference

Table 1: Checklist for authors and peer reviewers of qualitative studies

Introduction

- Is the research topic relevant and important?
- Is the specific research question clearly stated?
- Is the literature on the topic appropriately reviewed?
- Is ethical approval for the study documented?

Methods

Approach

- Is the qualitative approach clearly identified and justified?
- Is the approach appropriate for the research question?

Setting

- Is the study context well described?
- Is the role of the researcher well described?

Sampling

- Is the sampling method clearly described?
- Is a rationale presented for the sampling method?
- Is the method of calculating the sample size explained?

Information collection and analysis

- Is the method of information collection described in enough detail to understand the process?
- Is the method of information collection dependable?
- Is the method of analysis clearly described?
- Is the method of analysis appropriate for the research question?
- Are the methods of determining the credibility and transferability of the findings described?
- Are the methods of determining the credibility and transferability of the findings appropriate?

Findings

- Are there concrete details that portray the setting and describe what actually happened?
- Are there an appropriate number of quotations to get a sense of the participants' perspective?
- Is confidentiality maintained?
- Is the data analysis clearly described?
- Do the interpretations, themes or concepts created flow logically from the analysis?
- Is the analysis insightful?
- Are the findings dependable?
- Are the findings credible and transferable?
- Do the findings answer the research question?

Discussion

- Are the main findings of the study summarized?
- Are the implications and alternative interpretations of the results discussed?
- Are the strengths and limitations of the study identified?
- Are areas for further inquiry suggested?

Tables and figures

- Are the tables and figures useful in describing the main themes?

for them. Alternatively, a brief “translation” of easily explained concepts may be offered in brackets. This is particularly useful when discussing the dependability (reliability), credibility (internal validity) and transferability (external validity) of findings, which are concepts well known to medical readers, who are simply accustomed to different terms.

Elements of the report

The structured abstract

The structured abstract of qualitative research reports basically follows the same subheadings as any original research article except that the subheadings “Outcome measures” and “Interventions” are omitted, and the “Results” is replaced by “Findings.” The objective of the study is generally stated in a single phrase. The study design should identify both the approach (e.g., the use of focus groups) and the type of qualitative analysis used (e.g., grounded theory or phenomenology). The study setting is then noted, including the physical context and the area of clinical care if applicable (e.g., hospitalized patients or self-help group). The type of sampling method used as well as the number of participants approached to join the study and the number who agreed and participated should all be noted under “Participants.” Only the main findings should be described. Special care needs to be taken that the statements in “Conclusions” do not extrapolate beyond the findings. In all, the abstract should be about 300 words.

The introduction

The structure of the introduction is similar to that of any research article. Interest in the topic under study is usually sparked by noting what the area of inquiry is and why it is relevant and important to the reader.

The literature review in qualitative research reports may differ from that in the typical quantitative research article, in which all the pertinent literature is reviewed in the introduction to provide a context for the study. When

Table 2: Suggested word counts for the sections of a qualitative research article

| Section | No. of words |
|-------------------------------------|--------------|
| Introduction | 500 |
| Methods | |
| Approach | 100–150 |
| Setting | 200–250 |
| Sampling | 200–250 |
| Information collection and analysis | 600–750 |
| Findings | 1000–1200 |
| Discussion | 400–500 |
| Total | 3500 |

available, it is often useful to cite the important studies published to date that are related to the current study. However, because qualitative research is often undertaken to fill a gap in knowledge, there may not be much literature on the subject. Alternatively, the literature may be explored sparingly at first to not unduly direct the research question, especially in grounded theory, case studies and phenomenologic research. If the intent is to develop theory, constructs are not identified ahead of time. In such cases, the literature may be more appropriate later to extend the qualitative analysis and theory development.

Like any research study, a well-defined research question is critical. Not only does it set up clear expectations for readers and peer reviewers, it also allows them to determine whether the research method is appropriate for addressing the question. Research questions are usually framed in terms of discovering, exploring, explaining or understanding.

Documentation of ethical approval for any type of research involving human subjects is indicated. Recent guidelines¹⁵ may be helpful in clarifying requirements regarding informed consent.

The methods

Although there is a wide range of methods used in qualitative research, how to report them follows a uniform format. The methods section should include a description of the type of qualitative approach, the study setting, the sampling technique, and the methods of collecting and analysing the information. It is useful to describe each of these topics under a separate subheading.

The approach

The fit between the research question and the research approach is important to establish because it provides evidence that the researcher understands the nature of the problem and has selected an appropriate method of investigation. Not all questions are best addressed by qualitative methods, and even within qualitative research each approach and technique has its strengths in addressing certain types of questions. Therefore, it is advisable to specify the type of approach or paradigm used to address the question. Table 3 outlines some of the different types of qualitative research and identifies the genre of research question answered by them. For example, if the research objective is to gain a deeper understanding of women's feelings and reactions after a spontaneous abortion, a phenomenologic approach with face-to-face interviews would likely be more appropriate than a grounded theory approach using focus groups because of the sensitive nature of the topic.

The setting

When describing the research setting, it is important to describe the context of the setting in enough detail so that the reader can appreciate what the study environment looks, feels or sounds like — a "thick" description.²⁸ These descriptions will help the reader to judge the appropriateness of the setting and the researcher's sensitivity to the complexity of the phenomena. It is often useful to start with a description of the people, the setting and some of the main issues within the study environment.

In qualitative studies it is important to describe the role

Table 3: Classification of types of qualitative research*

| Strategy (paradigm) | Type of research question | Methods | Participants/informants | Type of results |
|--|---|--|---|---|
| Phenomenology (philosophy) ^{16,17} | What is the meaning of this phenomenon? | In-depth interviews, written anecdotes, philosophy, poetry or art | A few identified people, the use of art, poetry, etc. | Reflective description of experience: "What it felt like to..." |
| Ethnography (cultural anthropology) ¹⁸⁻²⁰ | What is the nature of this phenomenon? | Participant observation, unstructured interviews, documents, photographs | Participants and observers of participants | Description of day-to-day events |
| Grounded theory (sociology) ^{21,22} | What are the interactions or processes going on here? | Taped interviews, participant observation, focus groups, diaries | Key people who play specific roles | Theory development with respect to social and psychological processes |
| Ethnoscience (semiotics) ^{23,24} | What are the different types present here? | Observation, audiotape recording, videotape recording, field notes | People who observe the setting daily | Taxonomy, codes, explanations of types |
| Ethology (behavioural anthropology) ^{25,26} | What are the behaviours happening here? | Observations, interviews, photography | People who participate in a certain type of behaviour | Description of behavioural patterns |

*Source: Morse JM. Designing funded qualitative research. In: Denzin NK, Lincoln YS, editors. *Handbook of qualitative research*. Thousand Oaks (CA): Sage Publications; 1994. p. 224-5. © 1994 by Sage Publications. Reprinted by permission of Sage Publications.

of the researcher. The researcher's role may be one of several possibilities, from complete participant to complete observer. There are different potentials for bias associated with each of these roles. For example, a complete participant is likely to gain a detailed understanding of respondents' activities but may miss the external dynamics between the group and outside networks. On the other hand, a complete observer can analyse a broader scope of relationships but may lack access to the finer details of inner group dynamics.

The sampling method

There are a variety of sampling techniques available to the qualitative researcher that differ from those used in quantitative research. The choice of sampling method (e.g., snowball or purposeful sampling) should be described, and a rationale provided, that demonstrates the relevance of the sampling technique to the research method. Any initial inclusion and exclusion criteria should be noted and linked to the research question. However, these criteria are more fluid in qualitative research and may change with insights gained during the research and analysis; if this occurs it needs to be specified. How participants were identified for the study is important to describe so that readers and peer reviewers can assess whether these people are most likely to provide the information needed to answer the research question.

The researcher should explain the choice of sample size. An estimated sample size is usually established beforehand, based on previous experience or by referring to sample sizes used in similar studies. However, the critical determinant of sample size is saturation during the research process.²⁹ Noting criterion for stopping data collection (e.g., information overlap, redundancy or confirmation) is useful.

The methods for collecting and analysing information

One of the cardinal ways the quality of any research is assessed is by noting how rigorously the data were collected. Qualitative research may involve many different types of data collection, including observation, file reviews, diaries and log books, life history construction, videotapes, focus groups and field notes. There is such diversity and flexibility within any one of these methods that the researcher must describe in enough detail what steps were taken in collecting and recording the data for readers and peer reviewers to understand the process. It is similar to creating an "audit trail."³⁰ For example, if interviews were conducted, then specifying the type of interview (noting whether the interview guide was structured or open-ended) and the content (questions asked) is indicated.

Once the data collection process has been described, how the data were analysed needs to be explained in enough detail so that the methods can be reproduced. Readers and peer reviewers need to be able to assess the logic and any techniques used in the analysis. The researcher should start by referring to the method of data analysis associated with a specific strategy (or paradigm) of qualitative research. For example, grounded theory uses particular coding procedures to conceptualize and categorize information. A detailed explanation of content analysis is unnecessary; however, identifying the approach and providing a reference for those interested in a more detailed understanding of this type of analytic technique is indicated. If computer software is used to help manage the data and assist in analysis, the name, version and issuer of the program should be noted.³¹

On occasion, qualitative and quantitative methods of data collection and analysis are combined. Combining methods may be appropriate at times, for example when noting frequency counts and estimates for specific types of feedback from groups, or when validating and informing the qualitative research.²¹ A complete mixing of methods is questionable, however, because qualitative and quantitative methods are predicated on different assumptions and sampling techniques. Careful justification for combining very different research methods is indicated.

The researcher then needs to describe the methods used to assess the adequacy or the rigor of the findings. Typically, qualitative researchers want to ensure that their findings are dependable, credible and transferable.³⁰ Dependability (reliability) in qualitative measurement may be addressed by noting the methods of recording data and the use of verbatim accounts of interviews or direct quotations in field notes. Interobserver, interinterviewer, inter-recorder or interanalyst comparisons are also useful.³

Establishing credibility (internal validity) and transferability (external validity) of the data may be done by attempting to find exceptions, the use of triangulation (i.e., by describing the multiple methods of data collection, data sources, researchers or theories), ruling out the possibility of observer effect and obtaining a high level of "saturation" (concordance) in category development.¹¹ Member checks, or verifying the findings with the research participants themselves, is another method of assessing the credibility of data and has also been recommended in recent ethics guidelines.¹⁵

The findings

The presentation of the findings should follow the same general sequence as established in the methods section. The outcome of the sampling method should be noted in terms of the number of participants, who they

were and where they came from. Some of the raw data needs to be presented by describing the participants' perspectives, often by direct quotes or phrases; multiple perspectives are generally offered. Although participants and what they said need to be described, care must be taken to ensure confidentiality. Often the researcher has collected large amounts of data, so determining what should be included in the findings may be difficult. It is always useful for researchers to focus their findings by specifically addressing the research question.

It is necessary to demonstrate how the analysis (i.e., interpretations, concepts or themes) logically emerged from the data collected. To do so, coherence, integrity and relatedness should be demonstrated.¹³ Often it is useful to provide a table, figure or flow diagram to clarify the concepts and themes that emerged. This is an important way to supplement the information that can be given within the recommended word count.

Establishing that the data are trustworthy by identifying the results of checking its dependability, credibility and transferability needs to be described. This part of the findings section may be as long as the presentation of the findings itself. It is often similar to the discussion section of a quantitative research article, in which the results of the study being reported are compared with those from other studies.

The discussion

In the discussion section, the main findings should be summarized and the original research question addressed. The implications of the findings should then be explored. Strengths and weaknesses of the study should be outlined. Researchers should be careful not to generalize their findings inappropriately and may wish to note the limit to the generalizability of qualitative research in general. In conclusion, it is always useful to identify future areas of inquiry.

Epilogue

Like any science, qualitative research is evolving, informed by the current debates about methodology and what constitutes rigorous research. We have tried to provide generic and inclusive advice that will be useful in this broad and changing field. It is likely that computer software applications for qualitative methods will expand in the near future and creative adaptations of classic research paradigms will be devised to better address new research questions. In the meantime, qualitative research has established itself in the medical literature by providing insights into our current understanding about health, the illness experience and the effectiveness of health care. It promises to continue to do so for some time to come.

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