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Abstract

For many scientists used to doing quantitative studies the whole concept of qualitative research is unclear, almost foreign, or 'airy fairy' - not ' real' research. Clinical scientists sometimes find it difficult to accept this research method where the generation of hypotheses often replaces the testing thereof, explanation replaces measurement, and understanding replaces generalisability. Since qualitative research is becoming a prominent tool in medical research, it will be worthwhile to have a closer look at what it is and how it works.

Keywords

Quantitative, Qualitative, Phenomena, Open-Ended, Observations, Descriptive, Themes, and Categories

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Qualitative Research - Airy Fairy or Fundamental?

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For many scientists used to doing quantitative studies the whole concept of qualitative research is unclear, almost foreign, or 'airy fairy' - not 'real' research. Clinical scientists sometimes find it difficult to accept this research method where the generation of hypotheses often replaces the testing thereof, explanation replaces measurement, and understanding replaces generalisability. Since qualitative research is becoming a prominent tool in medical research, it will be worthwhile to have a closer look at what it is and how it works.

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Quantitative vs. qualitative

When a problem has been identified, the research must select a suitable tool or method to investigate it. As a rule, **quantitative research** is mainly concerned with the degree in which phenomena possess certain properties, states and characters, and the similarities, differences and causal relations that exist within and between these. It is usually based on theoretical or empirical considerations and quantifying phenomena. The advantage of the quantitative approach is that it measures, for example, the reactions of a great many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data. This gives a broad, generalisable set of findings.

Qualitative research on the other hand, is mainly concerned with the properties, the state and the character (i.e., **the nature**, of phenomena). The word *qualitative* implies an emphasis on processes and meanings that are rigorously examined, but not measured in terms of quantity, amount or frequency. Qualitative methods typically produce a wealth of detailed data about a much smaller number of people and cases. Qualitative data provide depth and detail through direct quotation and careful description of situations, events, interactions and observed behaviours.

To sum up, traditional quantitative methods such as randomised controlled trials are the appropriate means of testing the effect of an intervention or treatment, but a qualitative exploration of beliefs and understanding is likely to be needed to find out why some patients choose not to adhere to prescribed treatment. The two approaches should be regarded as complementary rather than competitive.

Understanding in qualitative research is therefore more akin to the understanding gained from an art, rather than from a science. This does not mean that it is an inferior kind of understanding, but it does mean that it is different, because it requires active

participation of the reader to identify with the situation and relate the findings to his/her own situation.

Qualitative methods

Qualitative methods consist of three kinds of data collection:

- In-dept, open-ended interviews;
- Direct observation; and
- Written documents, including such sources as open-ended written items on questionnaires and personal diaries.

The data from *open-ended interviews* consist of direct quotations from people about their experiences, opinions, feelings and knowledge. The data from *observations* consist of detailed descriptions of participants' behaviours, staff actions, and the full range of human interactions. Document analysis yields excerpts, quotations, or entire passages from records, correspondence, official reports and open-ended surveys.

The qualitative evaluation process

Qualitative data begin as raw, descriptive information about programmes and people in programmes. The evaluator visits the programe to make first-hand observations of programme activities, sometimes even engaging personally in those activities as a 'participant observer'. The evaluator talks to participants and staff about their experiences and perceptions, and records and documents are usually also examined. The data from these interviews, observations and documents are then organised into major *themes*, *categories* and *case examples* through content analysis. Qualitative evaluation data may be presented alone or in combination with quantitative data.

The validity and reliability of qualitative data depend to a great extent on the methodological skill, sensitivity and training of the evaluator. Systematic and rigorous observation involves far more than just being present and looking around. Skilful interviewing involves much more than just asking questions. Content analysis requires considerably more than just reading to see what's there. Generating useful and credible qualitative evaluation data through observation, interviewing and content analysis requires discipline, knowledge, training, practice and hard work.

An Example

Qualitative analysis seeks to capture the richness of people's experience in their own terms. Understanding and meaning emerge from in-depth analysis of detailed descriptions and verbatim quotations. The following example, one nurse's responses to a closed and an open question on a survey, illustrates what is meant by depth, detail and meaning. The first response was taken from a standardised item on a questionnaire:

Accountability as practices in our primary health care system creates an undesirable atmosphere of anxiety among nurses.

_____1. strongly agree
_____2. agree
_____ 3. disagree
_____ 4. strongly disagree

The nurse marked "strongly agree". Now compare this response to her response to an open-ended question:

Question: Please add any personal comments you'd like to make in your own words about any part of the primary health care system's accountability approach.

Response: 'Fear' is the word for 'accountability' as applied in our system. Accountability is a political ploy to maintain power and control us. The disappointment in our system is incredible. You wouldn't believe the new layers of administration that have been created just to keep this system going. Come down and visit in hell sometime.

These two responses illustrate one kind of difference that can exist between qualitative data derived from responses to open-ended questions and quantitative measurement. Quantitative measures are succinct and easily aggregated for analysis, they are systematic, standardised and easily presented in a short space. By contrast, qualitative responses are longer, more detailed and analysis is difficult because responses are neither systematic nor standardised. The open-ended response permits one to understand the world as seen by the respondent.

Direct quotations are a basic source of raw data in qualitative evaluation. They reveal the respondent's level of emotion, their thoughts, their experiences, their basic perceptions.

It is important to keep in mind that the purposes and functions of qualitative and quantitative data on questionnaires are different, yet complementary. The statistics from standardised items make summaries, comparisons and generalisztions quite easy and precise. The narrative comments from open-ended questions are typically meant to provide a forum for explanations, meanings and new ideas.

Some examples of research questions for qualitative research would be:

- How do patients manage to live with incurable pain?
- Perceptions and concerns of the school-age siblings of children with myelomeningocele.
- A critical incident study of general practice trainees in their basic general practice term.
- Recalled anxiety: from discovery to diagnosis of a benign breast mass.

Qualitative Analysis

Qualitative analysis of data involves the non-numerical organisation of data in order to discover patterns, themes, forms and qualities found in field notes, interviews, transcripts, open-ended questionnaires, diaries, case studies, etc.

Results would typically read:

- "Qualitative analysis of the data revealed two themes about…"
- Five categories of conviction emerged from the data. A pattern emerged from the interview results and the answers to three additional questions."
- "This paper is concerned with only one topic that has emerged from the material: hope."
- "The major hypothesis generated from the qualitative analysis was that…"

Reliability

Quantitative research methods are primarily intended to test theory; the researcher works deductively and is outcome orientated. Qualitative researchers, on the other hand, are concerned with the meaning of the phenomena and the lived experiences, which is not a readily observable process; there is attention to the social context in which events occur and have meaning, and there is an emphasis on understanding the social world from the point of view of the participants in it.

The reliability criterion for qualitative research focuses on identifying and documenting recurrent accurate and consistent (homogenous) or inconsistent (heterogeneous) features as patterns, themes, world views, and any other phenomena under study in similar or different human contexts.

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Author Note

At the time of writing this article,[+] ***Adri Labuschagne*** was production editor for *MRC News*, the quarterly newsletter of the South African Medical Research Council, as well as secretariat for the Ethics Committee. Her background is in biological sciences, not in qualitative research. The article was written in response to frustrations expressed by members of the Ethics Committee of the time, to give a general overview of the differences between quantitative and qualitative research. She can be contacted at adri.labuschagne@mrc.ac.za. The paper was originally published in *MRC News, 27*(2), 10, 1996 and is reprinted here by permission of the author and the Medical Research Council of South Africa.

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