

# Research and diabetes nursing. Part 4: Qualitative designs

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## Article points

1. Qualitative research is a broad term that covers a number of diverse approaches which seek to understand by means of exploration, human experience, perceptions, motivations, intentions and behaviour.
2. Qualitative research is often undertaken when there is little known about the phenomena to be studied and therefore it would not be possible to predict the relevant variables or the most relevant people to study, or when there is a lack of measuring instruments.
3. Although qualitative research is generally not considered to provide evidence that is as robust as that of quantitative research, if understanding and insights into the experiences and behaviours of individuals is the goal then the former approach is considered most appropriate.

## Key words

- Ethnography
- Grounded theory
- Phenomenology
- Qualitative
- Research

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This article is the fourth in a series that aims to assist nurses working in diabetes to understand research from a broad perspective, to help them critically appraise research publications and develop research protocols. This article focuses on the design of qualitative studies. Qualitative research deals with complex experiences, social processes and the effects of culture on individuals. The stance is taken that such experiences are too complex to be reduced to narrow definitions, numbers and measurement. Therefore, qualitative research is a complete contrast to quantitative approaches. There is a wide variety of approaches and methods, but qualitative research is characterised by flexible, interactive approaches to gain a holistic interpretation of human and social phenomena. In this article, some aspects of qualitative inquiry will be explored and illustrated with reference to four recently published studies.

This article is the fourth in a series that aims to give nurses working in diabetes an overview of undertaking and critically appraising research. The previous three articles in the series have progressed from outlining different degrees of research engagement, through critiquing published research to an overview of quantitative research designs. This article continues by considering the essential characteristics of qualitative research and providing examples of four different designs to illustrate some of the important features of qualitative research. As in the previous article in this series (Coates, 2011), design and methods are the focus rather than results.

As Dunning (2011) pointed out in the first article in the series, qualitative research is usually regarded as a less robust form of evidence than that generated by quantitative designs. However, it is favourable when seeking

to gain a better understanding of how people make sense of their world and their experiences. Thus, it can be of great relevance to DSNs who aim to better comprehend the complexities of issues facing people with diabetes and their families so as to become further equipped to understand and meet their needs.

## What is qualitative research?

To appreciate qualitative research, a whole new perspective to the generation of knowledge is required, sometimes referred to as a paradigm shift. As stated in the previous article in this series (Coates, 2011), quantitative research designs are based on the need for “precise measurement, replicability, prediction, and control” (Powers and Knapp, 2006). However, in qualitative research none of these concepts are considered important. Qualitative research is based on a paradigm in which (Brown, 2009):

*“A person’s experiences, perceptions, and social interactions are not reducible to numbers and categories – they are much too complex and context related.”*

Within qualitative research, the meaning that individuals give to their experiences is important as it is their perceptions that drive their beliefs, attitudes and behaviours. The context in which people are studied cannot be controlled or excluded, rather the individual has to be investigated within their social situation.

Qualitative research is a broad cover term “for a number of diverse approaches which seek to understand by means of exploration, human experience, perceptions, motivations, intentions and behaviour” (Parahoo, 2006).

Qualitative research has three defining characteristics:

1. It is inductive, in that it is open to ideas that result from the data rather than a predetermined investigation with defined variables (deductive).
2. It allows the researcher to interact with the participants rather than adopting an objective, inflexible stance.
3. It is holistic, in that it seeks to understand the whole phenomena rather than isolating and measuring one element of it. Indeed, the researcher is often considered an intrinsic part of the data-gathering process and through conversation helps the participant get to the crux of the matter.

Such characteristics are the antithesis of quantitative research and those who are imbued with quantitative methods may consider such lack of structure as unscientific.

### When is qualitative research used?

As nursing is based on caring for individuals in a holistic way, it lends itself to qualitative approaches. Over the past 20 years, there has been a great increase in the popularity of such approaches in nursing (Parahoo, 2003).

Qualitative research is often undertaken when there is little known about the phenomena to be studied and therefore it would not be possible to predict the relevant

variables or the most relevant people to study, or when there is a lack of measuring instruments. It is often used when seeking to conduct developmental work that will later inform a larger quantitative research study. It can also be used to supplement quantitative results to add explanations and context to numerical data. However, qualitative research is also undertaken exclusively when it is felt that the phenomena to be studied is complex, variable or highly individual and thus would not lend itself to measurement and standardised instruments.

### Design and methods

The main characteristics of qualitative research, as mentioned above, can be embodied within a range of data-gathering methods. They can be applied to individual or focus-group interviews. Data can be gathered by means of semi-structured or minimally structured interview processes, through observation of the phenomena or via patient diaries, narratives, blogs and stories. The data gained by these various methods can then be analysed manually or with electronic software (e.g. NUD\*IST, ATLAS.ti or NVivo) using a range of techniques such as content analysis (Flick, 2006), framework analysis (Smith and Firth, 2011) or interpretative phenomenological analysis (Quinn and Clare, 2008).

In addition to general qualitative approaches, three terms that will be commonly encountered in the literature are “grounded theory”, “phenomenology” and “ethnography”. The similarities and differences in these approaches are outlined below with reference to relevant studies on managing diabetes.

### Examples of research using qualitative approaches

#### General qualitative approaches

The research reported by Oftedal et al (2010) includes and explains many of the features that are characteristic of qualitative design and methodologies. The aim of this study was to explore how adults with type 2 diabetes perceived different attributes of support from their healthcare practitioners and whether such

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support influenced their subsequent motivation to self-manage their diabetes.

The authors began by reviewing literature and identified a wide range of studies about motivation for self-management and relating to healthcare professionals' support for diabetes self-management. However, they concluded that much of the relevant literature is "largely anecdotal, or implied in related research, but not clearly articulated". Their rationale for a qualitative approach was that because motivation is an individual experience, an approach to using patients' own perspectives would be most fruitful.

The design of their study was interpretive and descriptive and was to serve as a pilot for a future national study. A purposive sample was recruited. Such a sample is one in which subjects who satisfy the needs of the study are specifically sought (Powers and Knapp, 2006). It is entirely appropriate to select individuals with specific attributes to ensure a range is achieved, such as specific ages, urban or rural dwelling, educational levels or duration of diabetes. For example, the authors stated that "People with more than 5 years' experience of type 2 diabetes were strategically recruited". This is in contrast to quantitative research where it is important to gain a representative sample, or a sample in which all people meeting the inclusion criteria have an equal chance of being selected. The sample in this study (Ofstedal et al, 2010) comprised people with type 2 diabetes, diagnosed for at least 1 year, aged 30–65 years and who had experienced differing forms of health service support. In this study, 19 people were recruited.

Sample size tends to be smaller in qualitative studies as the data-gathering techniques are often intensive. Furthermore, sample size can evolve as the study progresses. When no new concepts or experiences are being identified in the data, the topic can be said to be saturated and no further data are required. This is in contrast to quantitative research in which the sample size must be determined in advance of the study.

Data gathering was achieved by means of focus-group interviews, each comprising five to seven people. Focus groups are used when the interaction encouraged by group discussion can enhance the data generated; "the explicit use of the group interaction to produce data and insights that would be less accessible without the interaction found in a group" (Morgan, 1988). This is an example of encouraging interaction rather than control.

Each focus group interview lasted for up to 2 hours. Thus, although the sample was relatively small, the duration of the time spent with each participant was substantial and this may be considered more informative than in a quantitative study, in which a larger sample is used but participants only have to tick boxes or give fairly limited or superficial levels of numerical data. Therefore, from the 19 study participants, a great amount of data would have been generated.

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1. Content analysis is the categorisation of the written transcript into predetermined themes according to rules to guide whether the content belongs to one category or another.
2. In the Oftedal et al study, five themes relating to perception of support from the healthcare professionals were identified.
3. Grounded theory is used when the aim is to develop a theory to explain some aspect of human behaviour or relationships.
4. The distinctive features of grounded theory are that theory will be generated from the data gathered, a constant comparative method of data analysis will be used and the researchers interact with the data as they are being gathered to formulate a tentative theory or hypotheses and then test it with further data.

This study (Oftedal et al, 2010) used many of the expected techniques for data analysis. First, the data were transferred from audio tape to writing in a process known as transcription. The recordings must be written up word for word, as it is often the terms and nuances of individuals that can be most revealing. The authors describe the process of data analysis as a form of content analysis. Content analysis is the categorisation of the written transcript into predetermined themes according to rules to guide whether the content belongs to one category or another (Powers and Knapp, 2006). This technique should minimise bias and leads to the identification of manifest themes within the data. In this reported study, the transcripts were read through in their entirety to gain “a sense of the whole”.

Following detailed re-reading, “meaning units” were identified, condensed and allocated a code. The different coded elements were then compared to determine similarities and differences, leading to the identification of tentative themes. Five themes relating to perception of support from the healthcare professionals were identified using these techniques. These themes were then analysed to determine relationships between them and subsequent motivation for self-management.

In quantitative research, validity and reliability are important indices of rigour, but a completely different approach is taken to ascertain quality in qualitative research. For example, as reliability is about consistency, it is not expected that semi-structured interviews with individuals would ever be consistent or repeatable, thus the concept is redundant. However, it is still important that data are of high quality, and concepts such as accuracy, truth and credibility are important.

In this study (Oftedal et al, 2010), steps were taken to strengthen the credibility, dependability and transferability of the data; these steps were explained in the article. Regarding study limitations, the authors acknowledged that by including mostly participants who had acceptable levels of glycaemic control the results might have been biased; had there been more individuals with poorer control then different

perceptions of healthcare professional support and motivation may have been reported.

#### Grounded theory

Grounded theory is used when the aim is to develop a theory to explain some aspect of human behaviour or relationships. In this approach the researcher clearly has an area and target population of interest, but has not been able to establish what the important variables (phenomena) are and how they may be linked. This approach is clearly described by Strauss and Corbin (1990):

*“A grounded theory is one that is inductively derived from the study of the phenomena it represents. That is, it is discovered, developed, and provisionally verified through systematic data collection, and analysis of the data pertaining to that phenomenon ... One does not begin with a theory then prove it. Rather one begins with an area of study and what is relevant to that area is allowed to emerge.”*

The distinctive features of grounded theory are that theory will be generated from the data gathered, a constant comparative method of data analysis will be used and the researchers interact with the data as they are being gathered to formulate a tentative theory or hypotheses and then test it with further data. This process can continue over a number of iterations until it is thought that a theory has been proposed and can be defended from the data. These principles can be illustrated through the research conducted by Olinder et al (2011) to gain insight and generate theoretical knowledge about the processes involved when adolescents using an insulin pump take or miss bolus doses.

Participants were recruited from four paediatric clinics with the intention of selecting a diversity of individuals, from those who frequently missed doses through to those who rarely missed. In addition, people with different demographic backgrounds were sought. Each individual was interviewed

and once the interview had taken place it was transcribed. When eight interviews were completed they were analysed and a “preliminary core category” was identified from the data: “responsibility”. This theme was then developed during successive interviews.

*“Topics brought up spontaneously in earlier interviews were raised in subsequent interviews, and questions were adapted according to the emerging categories” (Olinder et al, 2011).*

Parents and a paediatric DSN were then included in the sample as it was thought that their views would be relevant to this emerging theme. Thus, neither the sample nor the interview schedule were fixed, rather they evolved over time as interesting concepts were identified from the data.

The data were coded on a line-by-line basis, these codes were then compared with others in the data and sorted out into differing concepts around the theme of responsibility. New data were constantly compared with the existing concepts. Relationships between concepts and the theme of responsibility were also sought and in this way a theory was constructed. Steps were taken to enhance the rigour of the data by aiming to increase credibility and transferability. The processes are outlined in the article (Olinder et al, 2011).

### Phenomenology

Phenomenology is based on a philosophical stance in which it is argued that only those who have experienced a phenomenon are really able to describe it to others (Parahoo, 2006). This approach is illustrated in a study by George and Thomas (2010), in which the experiences and perceptions of self-management of insulin-dependent diabetes among older people living in a rural area were explored. Once again, the sample was purposive, specifically seeking people aged 65–85 years who were confined to their homes, living in a rural area and willing to talk about their diabetes at length. The method used was designed “to describe the human experience on its own terms”.

In phenomenology it is important that researchers are aware of their own preconceptions and strive to ensure that they do not allow them to bias their interpretation of the data. The way this was dealt with was explained in the article using a process known as bracketing.

The interviews were relatively unstructured, they began with participants being asked “Please tell me about what it is like for you living with diabetes?”. Participants were then allowed to talk for as long as they wished. The interviews were recorded, then the data transcribed and these transcriptions were read repeatedly until the researcher gained a sense of what “the lived experience” was like for each person. The data were analysed by members of an interpretive, phenomenology research group by listening to the data and identifying meaning units, themes and eventually a thematic structure was delineated. Following analysis, steps were taken to ensure the results were rigorously developed. These processes are reported in the article (George and Thomas, 2010).

### Ethnography

The roots of ethnography lie in social anthropology and typically involve researchers living among people from other societies or cultures in order to conduct their research. The researcher is the main channel of data collection, which usually takes the form of participant observation. “Ethnography allows the researcher to study how and why people behave the way they do” (Parahoo, 2006). The researcher works “in the field” taking field notes about what they see and hear. In the realm of health care, this clearly has to be achieved within ethical and legal boundaries.

Lundberg and Thrakul (2011) report an ethnographic study undertaken to explore how Thai Muslim women manage their type 2 diabetes. As there was a dearth of literature relating to diabetes self-management in Thailand, and especially concerning Muslims, this study was explorative, based on ethnography and involved qualitative interviews and participant observation. The

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sample was purposive, consisting of 29 women representing a diversity of ages, duration of diabetes, treatment modalities and demographic variables. In addition to the observation of the women in their own homes they were also interviewed using a semi-structured schedule. The data from the interviews and the field notes were transcribed and then coded.

The process of analysis is described and was based on the techniques of Strauss (1987) and Woofitt (1993). The steps taken to increase credibility of the data included peer checking, validation of codes and expert debriefing. Lundberg and Thrakul (2011) remind us that “Many Muslims consider illness as atonement for sins and meet it with patience and prayers”, and through their ethnographic study it was shown that although modern medicine was appreciated, it was seen to be at odds with the women’s cultural beliefs and practices.

### Conclusion

In this article, the essential characteristics of qualitative research design and methods have been outlined and exemplified with reference to four studies on the self-management of diabetes. To appreciate qualitative approaches requires a completely different “mind set” to that required for quantitative research. Lack of structure should not be confused with lack of rigour. Qualitative research should not be considered an easy option by those who wish to avoid statistics because to conduct a robust piece of qualitative work is every bit as challenging as conducting a good-quality, quantitative study.

Debates about which research approach, quantitative or qualitative, is superior are not particularly helpful. Depending on the purpose of the research, different approaches have obvious strengths and weaknesses. Although qualitative research is generally not considered to provide evidence that is as robust as that of quantitative research, if understanding and insights into the experiences and behaviours of individuals is the goal then the former approach is considered most appropriate. As for all research, if the results are to be of value then the study must be designed and conducted with rigour. ■

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