The use of grounded theory to study interaction

In this paper Hanna Maijala, Eija Paavilainen and Päivi Åstedt-Kurki examine the use of grounded theory from the perspective of data analysis. The paper reports on the findings of a Finnish study of interaction between caregivers and families expecting an impaired child. The objective of the study was to describe and explain the social processes between caregivers and families expecting an impaired child by identifying the central descriptive concepts, their interconnections, and the overall structure of the interaction process. The authors conclude that grounded theory is a diverse approach to studying interaction, and that the constant comparative method is a challenge to a researcher's perseverance and flexibility

key words
- ▶ methodology
- ▶ grounded theory
- ▶ research process
- ▶ interaction

Introduction

The introduction of grounded theory in the 1960s has been referred to as a revolution in qualitative research (Glaser and Strauss 1967, Schatzman and Strauss 1973). Barney G Glaser and Anselm Strauss developed the approach in response to the prevalent view of quantitative research as the only model of social science research (Charmaz 2000, Johnson 1999, Wells 1995).

Grounded theory is used to generate inductively derived substantive and middle-range theories through systematic data collection and analysis, and

formal theories based on substantive theories (Glaser and Strauss 1967, Strauss and Corbin 1990). The foundations of grounded theory are embedded in symbolic interactionism (Annels 1996, Blumer 1969, Schwandt 1994). The approach is characterised by examination of social phenomena and interaction and by its focus on informants' personal experiences and basic social processes. Grounded theory is especially suited for areas where there is minimal knowledge of a phenomenon or when a new perspective on everyday phenomena is required (Glaser and Strauss 1967, Strauss and Corbin 1994,1998).

While developing the approach, Glaser and Strauss differed on its basic questions, which resulted in two approaches, namely the Straussian inductive-deductive approach and the Glaserian inductive approach (Glaser 1978, 1992, 1998, 2001, Strauss and Corbin 1990, 1998). According to Glaser (1992), Strauss and Corbin's (1990) method of analysis fails to generate theory but is a forced conceptual description. The latter authors attempted to correct the excessive emphasis on inductive reasoning characteristic of Glaser's approach, and emphasised the role of preconceived theories in the analytic process (Nurminen 2000, Siitonen 1999). Despite the difference of emphasis, both approaches seek to generate theories explaining the phenomenon under study through systematically collected data and the constant comparative method (Charmaz 2000, May 1996, Stern 1994).

The use of grounded theory has gained considerable momentum during the past decade and, at the same time, criticism of the approach has increased (Baker *et al* 1992, Becker 1993, Benoliel 1996, May 1996, Stern 1994, Wilson and Hutchinson 1996). This paper describes the use of grounded theory in a study of interaction between caregivers and families expecting an impaired child. Drawing on the Straussian approach, the purpose of the paper is to focus on the data analysis phase (Strauss and Corbin 1990, 1998). The aim is to highlight issues that arose during the analysis phase and to examine them in light of the criticisms voiced.

Purpose of the study
The purpose of the study was to generate a substantive family theory delineating the interaction process between caregivers and families expecting an

impaired child. The aim was to answer the following questions:

■ What are the content areas of the interaction process between families and caregivers in a situation where a family has learned that they are expecting an impaired child?

■ What relationships exist between the concepts describing the content of the interaction process between caregivers and families expecting an impaired child?

■ What is the overall structure of the concepts describing the interaction process between caregivers and families expecting an impaired child?

The purpose was to describe and explain relationships between these families and caregivers and their actions as experienced by them.

Professional and personal experiences and earlier studies had an impact on the selection of the research topic (Chenitz 1986, Strauss and Corbin 1990), and the observation that nursing research has rarely addressed the topic was of central relevance in this respect (Askey and Moss 2001, Bryar 1997, Chandler and Smith 1998, Sandelowski and Jones 1996). In this study, the researcher was involved in interaction instead of being understood as an outsider. The aim was to understand the social reality of the interviewees and to use the thoughts and experiences that arose during the research process to enrich it (Annels 1996, Charmaz 2000, Hutchinson 2000).

The selection of the topic was followed by preliminary familiarisation with the scientific literature and earlier research (Strauss and Corbin 1990, Backman and Kyngäs 1999, Cutcliffe 2000). The Cinahl and Medline databases (years 1990-2001) served as primary sources of data. A preconception was formed of foci in earlier interaction research, of helpful interaction from the perspective of family nursing and, more generally, of challenges for developing family-caregiver interaction. A preliminary review was conducted of earlier research into helpful interaction between caregivers and families expecting an impaired child. The knowledge helped the researcher become aware of her preconceptions about the topic, provided the basis for launching negotiations with the research unit involved in the study, and served to enrich the themes underlying the interviews (Benoliel 1996). However, in order to maintain an approach grounded in data (Glaser 1978), critical self-reflection was used to avoid the guiding effect of the preconceptions.

Data and data collection

The combination of multiple data collection methods is characteristic of grounded theory (Charmaz 2000, Hutchinson 2000). The present study involved three sets of data. The central criterion for selecting informants was their experiential knowledge of the phenomenon under investigation (Cutcliffe 2000).

The first data set consisted of audio taped interviews with 29 (n=29) parents from 18 families who were or had been expecting an impaired child, yielding a total of 686 pages of transcribed text. The seriousness of foetal impairment ranged from a possibly self-correcting impairment to a lethal one.

The staff of the research hospital made the initial assessment of which informants would be invited to participate in the study, and when. At the same time, a covering letter composed by the researcher was handed to potential informants. The informants' contact information was not available to the researcher until they had agreed to be interviewed. Informed consent was obtained from all informants. The recruitment process was especially discreet because of the sensitive topic (Lee 1993, Kavanaugh and Ayres 1998, Sieber and Stanley 1988).

Depending on families' circumstances, interviews were conducted during pregnancy or at the latest one month after childbirth or pregnancy interruption. Eighteen parents were interviewed once, 10 twice and one four times. Pair interviews were conducted with 20 parents and individual interviews with nine parents. The audio taped sessions ranged from 10 to 113 minutes in length.

The second data set consisted of audio taped interviews with 22 (n=22) caregivers at the women's clinic working with families expecting an impaired child, yielding a total of 462 pages of transcribed text. The sample involved 17 midwives, one nurse, and four doctors. All but two informants had at least 10 years of work experience. These informants were recruited personally and orally, after giving them information about the study. The interviews were conducted once, except for one doctor who was interviewed twice. The interviews were conducted privately, with only the researcher and the interviewee present. The audio taped sessions ranged from 31 to 60 minutes in length.

In both data sets, the questions asked were built around broad interview themes. The themes included the family's need for psychological support, factors preceding interaction, and the beginning phase, central content, termination, and consequences of interaction (Strauss and Corbin 1990, 1998). These were conversation type themes, which moved from general issues to specific themes allowing informants to answer on their own terms. During the data collection phase, the preceding interviews were used to deepen and broaden the themes of the subsequent interviews (May 1991, Swanson 1986, Wimpenny and Gass 2000). The interviews were conducted from 1999 to 2000, and data collection lasted one year and three months.

The third data set consisted of essays written by five mothers and fathers (n = 5), resulting in 57 pages altogether. Informants represented four families who had expected an impaired child. The time elapsed since pregnancy interruption ranged from about one month to over five years. Two families had lost a child due to foetal impairment, whereas one family had decided to terminate the pregnancy and one had given birth to a child with Down syndrome.

The families were identified through a voluntary organisation for families who had lost a child or had disabled children. Parents were contacted by telephone and asked to write free form essays about their experiences of interaction with caregivers during pregnancy, after having learnt that they were expecting an impaired child. Informants were asked to focus on issues they felt were important and which they especially remembered. Informants were offered the chance to contact the researcher while writing the essay. None of the informants contacted the researcher, but informants posted their essays within a month after the request as agreed.

Data analysis

The constant comparison method was used as a tool for understanding the empirical world, aiming at flexibility rather than formality (Annels 1996, Charmaz 2000). Pre-processing of the interview data began by assigning serial numbers to interview tapes immediately after the interview. Identification data concerning the tapes were recorded in memos that were not accessible to outsiders and were used to support the analysis (Hutchinson 2000).

A professional who was not involved in the study, and who upheld confidentiality, transcribed the interviews. The family data and caregiver data were analysed as independent units. The parties' views were perceived as independent, on the one hand, and as connected, on the other, like the two sides of a mirror. It was thought that the views could be examined side by side as to the areas that complement and contradict one another.

■ Open coding

Open coding began by listening to the taped interviews and by reading the transcripts in parallel to check the accuracy of the text and to create a general view of the interview. The transcripts were then re-read, and all interview passages depicting interaction were underlined to gain a preliminary understanding of the manifestations of interaction (Corbin 1986a). The text was re-read by highlighting the underlined passages with different colours according to whether they seemed to describe antecedents of interaction, actual interaction, or consequences of interaction (Strauss and Corbin 1990, 1998). A tentative outline for interaction as a process thus started to emerge.

The original interview passages were next coded in a reduced form in the margin with tentative substantive codes (Chenitz and Swanson 1986, Corbin 1986a, Stern 1987). From the outset, an effort was made to generate conceptual codes, for instance, the interview passage 'First he came to have a look at the ECG and then he asked if everything was okay' was labelled with the substantive code 'showing interest' (Fagerhaugh 1986, Strauss and Corbin 1990). However, it appeared that coding the passages with substantive codes would result in losing the specific content of the data, and a decision was made to adhere to the original passages or *in vivo* codes for as long as possible so that, for instance, the passage 'I will now insert a needle through your stomach' was coded as 'Informing the patient of inserting a needle through the stomach' (Strauss and Corbin 1998, Wilson and Hutchinson 1996).

In the early stages of the analysis, the reduced phrases were manually sorted on a large piece of paper so that all the phrases were visible at once. It was thus possible to review each interview within its context, which made it possible to get a concrete feel for the text. The array of the original phrases

was converted into substantive codes when they did not appear to impair the quality of the specific content of the phrase. For instance, the phrase 'Suggestions that the father stop interfering and go back to work' was coded as 'Ushering the father away'. The codes were then entered into a Word 1997 word processor file.

As the analysis proceeded, arranging the passages on paper by hand gradually turned into mechanical repetition, and this intermediate phase was abandoned as unnecessary. Instead, the original passages and the *in vivo* codes were entered into the word processor so that each interview remained an independent unit. The distinction between the original expressions and substantive codes started to fade as the work proceeded, and in the end it vanished completely. The procedure yielded 4,307 substantive codes in the family data and 2,395 in the caregiver data. Retaining the codes together with their respective interviews at the beginning of the analytic process facilitated the management of a large number of codes. This made it possible to perceive small entities and to recall individual codes in the final analysis.

The substantive codes were grouped by properties through comparisons with one another within each interview, without labelling the groups (Glaser and Strauss 1967, Strauss and Corbin 1990, 1998). This was done to avoid formation of categories too early in the data collection (Wilson and Hutchinson 1996). For example, the following reduced phrases from interview no. Eighteen were grouped together:

> 'We had a single room and enjoyed at least some peace and quiet.'
>
> 'It is a positive thing to be offered a single room.'
>
> 'It would be terrible to be in a patient room where someone else gets the reward and you don't.'
>
> 'It was a positive thing to be able to stay in a single room.'

The groups were reviewed both within and between interviews by making comparisons and asking questions such as 'what is happening here?' and 'what does it seem to mean?' The constructs used at the beginning of analysis, that is, the antecedents of interaction, actual interaction, and consequences of interaction, were consciously abandoned so as to avoid forcing the data (Glaser 1992). The perspective was not confined to what happens

in helpful interaction, since the data also appeared to contain other dimensions of the social psychological process, for instance, contemplation related to the child's impairment (Strauss and Corbin 1998).

The formulation of subcategories began by coupling two interviews, grouped in the manner described above, and by re-grouping them as was done within each of the two interviews. The subcategories were given tentative labels by connective properties so that attention was focused on social and psychological action, for instance, by labelling a category, which later dissolved, as 'Confidence in family's internal support'. The idea was to remain open to the accumulating data. During the data collection phase, data were added to the totality of the two interviews in accordance with the same principle. New categories continued to emerge, some of which broke down into new categories while others were omitted or were re-labelled to better specify their content (Strauss and Corbin 1990, Corbin 1998). By the end of the analytic process, 108 subcategories had emerged from the family data and 81 from the caregiver data.

The analytic steps of open coding can be summarised as follows:

1 Joint reading of interviews and text
2 Underlining segments describing interaction
3 Tentative outline of interaction process
4 Tentative substantive coding in the margin
5 Arraying substantive codes in order of course of interview
6 Completing substantive coding interview by interview and; fading out dividing line between original segments and substantive codes
7 Grouping substantive codes within interviews by their properties
8 Comparing groups of substantive codes by asking 'what is going on here?'
9 Conscious outlining of interaction process temporally abandoned
10 Formation of subcategories and tentative labelling while adding to data.

■ Axial coding
A search for connections between the categories began in the open coding phase at the level of pre-thinking before their formation. This was done by

reading the interview texts while attempting to outline the interaction process (see open coding). In the axial coding phase, the researcher returned to Strauss and Corbin's coding paradigm in this respect but analysed the connections in a more systematic manner. The core questions and 'intervening factors' in interaction were also outlined (Corbin 1986b, Strauss and Corbin 1990, 1998). At the same time, sub-categories were compared against one another and grouped according to their conceptual properties. For example, the following subcategories in the family data were grouped together:

Contemplating the environment's reactions

Annoyance because of interest shown by environment

Strain caused by closeness of relatives

Painful feelings caused by proximity of babies

Protecting one's privacy

Identifying societal pressures.

The grouping was given the category label 'Family's outside relationships'. The properties of the categories developed from subcategories were further compared against one another to detect similarities and dissimilarities. Factors initiating the interaction process and core questions characteristic of the parties involved, central to the advancement of the process, emerged clearly from both data sets. For example, the above-mentioned category 'Family's outside relationships' was grouped together with the categories 'Family relationships', 'Family members' self-relationships', and 'Family's attitude towards child's malformation'. These generated the main category: 'basic issues which family has to deal with as the core content of interaction'. The core questions appeared to be associated with the antecedents of interaction, that is, the involved parties' goals for, and expectations of, interaction, which manifested themselves in practical action. The care system as an interactive environment emerged as an 'intervening factor' contributing to interaction. The process outcome was manifested in the experiences of being helped and being left without help (see Figure 1).

Data collection and analysis proceeded simultaneously, by which the emerging theory was constructed, assessed and refined (Becker 1993). For

example, the category 'Wishes to have open discussions' was revised in a repeat interview by asking '...like you said earlier, as far as information is concerned, to be able to verbalise these situations...?'

Theoretical sampling was thus employed to collect data (Becker 1993, Charmaz 2000, Chenitz and Swanson 1986). As for the caregiver data, a decision was made to conduct interviews with doctors in addition to mid-wives in accordance with the principle of theoretical sampling; as data collection and analysis proceeded, it became apparent that it was necessary to hear the doctors' views of the interaction process (Morse 1995).

The findings from previous studies were also used to enrich data collection (Strauss and Corbin 1990). While returning to the analysis, an attempt was made to avoid the guiding effect of previous studies to maintain an inductive perspective (Backman and Kyngäs 1999, Wilson and Hutchinson 1996).

The analytic steps of axial coding can be summarised as follows:

1 Relating categories to each other partly in keeping with coding paradigm of Strauss and Corbin (1990)

2 Simultaneous grouping of subcategories through constant comparison; formation of categories

3 Simultaneous grouping of categories through constant comparison; formation of main categories

4 Simultaneous search for connections between main categories while outlining interaction process through theoretical sampling.

■ Selective coding

The transition from axial coding to selective coding was flexible. The categories and their interconnections were further developed with the accumulating data in an attempt to find the basic social psychological process while trying to resist premature labelling of the structure of interaction (Hutchinson 2000, Strauss and Corbin 1990, 1998). The core category, and the basic process of interaction, was labelled 'Gaining strength and losing strength in relation to impairment issues'. The collection of interview data was terminated when the whole appeared rich and diverse and no new data emerged

(Morse 1995). A tentative substantive theory of interaction between care-givers and families expecting an impaired child was established. The interaction process starts when parents and caregivers share the knowledge of the child's impairment. The process moves from impairment-related issues, coping mechanisms, and subjective problem-solving methods, characteristic of the parties, to anticipation of support; parents want support and caregivers seek to give it.

In this stage, theoretical sampling was employed in the family data through data triangulation (Glaser and Strauss 1967, Knalf and Breitmayer 1991, Strauss and Corbin 1998). The comparison group consisted of essays written by five parents (n=5), which were assumed to deepen the family perspective on interaction.

In the initial stages of open coding, the essay data were analysed as a whole in the same way as the interview data. Altogether, 372 substantive codes emerged. The deductive and inductive processes were combined so that subcategories were labelled on the basis of the findings from the interview data, when it was possible without forcing the data (Stern 1987). The number of subcategories was 70, 67 of which were identical to those in the findings from the main corpus of data. The subcategory 'Crying' was new, and it was integrated into the emerging theory as a manifestation of family functioning, because its content was clearly identifiable in the main corpus of data, though not labelled as a subcategory of its own. The contents of the other two subcategories, different from the tentative theory, were congruent with this subcategory, which meant that at this stage only their names

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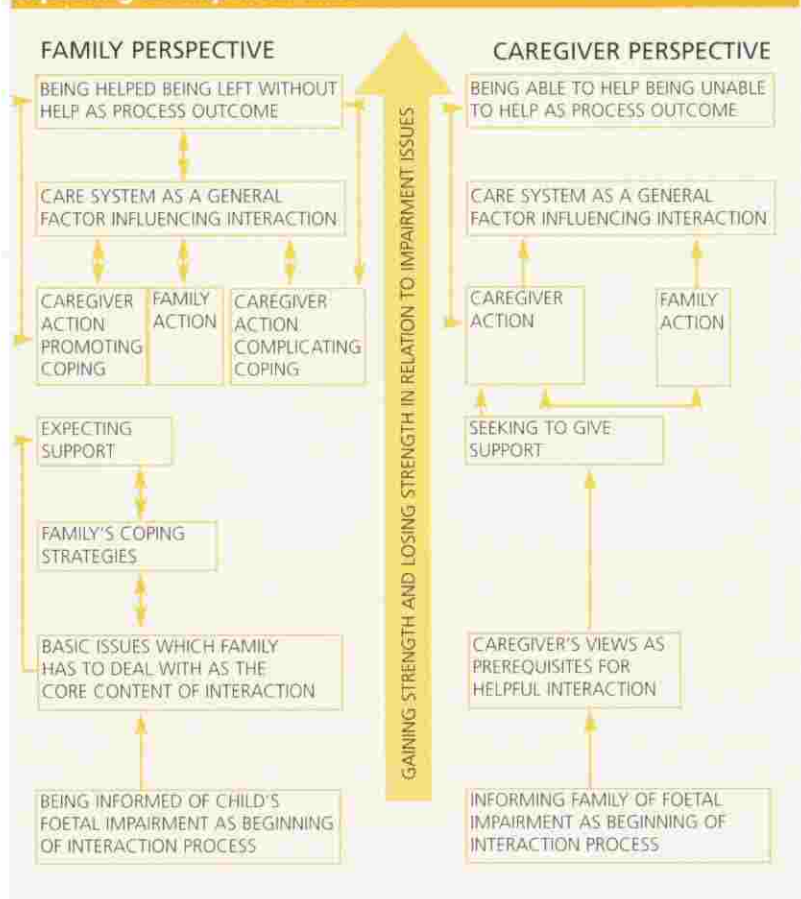The analytic steps of selective coding can be summarised as follows:

1 Developing connections between categories while adding to data

2 Outline of basic social psychological process

3 Collection of interview data terminated

4 Formation of tentative substantive theory

5 Theoretical sampling in the case of family perspective using data triangulation

6 Analysing essay data as an independent whole by combining inductive and deductive reasoning

7 Specifying substantive theory.

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emerged. The subcategories were distributed across the entire tentative substantive theory, except for the main category 'Family's own coping strategies'. A possible explanation for this is the request to write about experiences of interaction with caregivers.

Since the categories appeared saturated and seemed to have clear connections, and the totality corresponded with the research questions, the analysis was terminated (Morse 1995, Charmaz 2000).

The resulting substantive theory is presented in reduced form in Figure 1.

Figure 1. Interaction process between caregiver and family expecting an impaired child

FAMILY PERSPECTIVE — CAREGIVER PERSPECTIVE

GAINING STRENGTH AND LOSING STRENGTH IN RELATION TO IMPAIRMENT ISSUES

BEING HELPED BEING LEFT WITHOUT HELP AS PROCESS OUTCOME

CARE SYSTEM AS A GENERAL FACTOR INFLUENCING INTERACTION

CAREGIVER ACTION PROMOTING COPING — FAMILY ACTION — CAREGIVER ACTION COMPLICATING COPING

EXPECTING SUPPORT

FAMILY'S COPING STRATEGIES

BASIC ISSUES WHICH FAMILY HAS TO DEAL WITH AS THE CORE CONTENT OF INTERACTION

BEING INFORMED OF CHILD'S FOETAL IMPAIRMENT AS BEGINNING OF INTERACTION PROCESS

BEING ABLE TO HELP BEING UNABLE TO HELP AS PROCESS OUTCOME

CARE SYSTEM AS A GENERAL FACTOR INFLUENCING INTERACTION

CAREGIVER ACTION — FAMILY ACTION

SEEKING TO GIVE SUPPORT

CAREGIVER'S VIEWS AS PREREQUISITES FOR HELPFUL INTERACTION

INFORMING FAMILY OF FOETAL IMPAIRMENT AS BEGINNING OF INTERACTION PROCESS

Conclusions

■ Reliability

The following section examines the reliability of the study based on the eval-
uation criteria for a substantive theory generated using the grounded theory
method. These are as follows: fit, understanding, generality, and control
(Glaser and Strauss 1967, Hutchinson 2000, May 1986, Strauss and Corbin
1990, 1998).

Fit entails that the theory fits the empirical data and outlines practical
interaction between caregivers and families expecting an impaired child
(Glaser and Strauss 1967, Hutchinson 2000, May 1986). When assessing fit
as to data analysis, it was essential that informants had personal experiences
of the research topic. They were prepared to share their experiences and
were therefore selected in accordance with the purposive principle
(Nieminen 1997). Reliability of the data may have been affected by ethical
and practical compromises such as defining the time for an interview accord-
ing to the situation. Viewed as a whole, the data nevertheless provided
sufficient possibilities to explore interaction between caregivers and families
expecting an impaired child.

When assessing fit from the perspective of data analysis, it was important
to note how reliably the views of the informants were captured. This called
for awareness of the researcher's own thoughts and feelings. The memos and
research supervision served as important tools for this (Charmaz 2000,
Strauss and Corbin 1998). Although the analysis aimed at truthfulness, one
had to accept that capturing other people's experiences was not entirely pos-
sible. Relative truthfulness was thus set as a sufficient goal (Munhall 2000).

Reliability of the analysis was verified through the use of simultaneous data
collection and analysis phases inherent in the constant comparison method.
The results were generated inductively and systematically drawing on the
process-like nature of interaction. The results were continuously revised with
the help of the data. In addition, a separate theoretical sampling of essay
data was performed as to the family data (Glaser and Strauss 1967, Strauss
and Corbin 1990, 1998.)

If caregivers and families expecting an impaired child feel that the theory
matches their reality, it meets the criterion for understanding (Chenitz and

Swanson 1986, Glaser and Strauss 1967, Hutchinson 2000, May 1986). Understanding was verified through comments on the findings from research unit staff, which confirmed that the theory was understandable.

To meet the criterion for generality, the theory generated must to be applicable in a variety of interactive situations involving caregivers and families expecting an impaired child. On the one hand, this requires a high enough level of abstraction. On the other hand, it is important that the level of abstraction is not so high as to lose the special characteristics of the theory (Chenitz and Swanson 1986, Glaser and Strauss 1967, Hutchinson 2000). In this study, the special characteristics of the data, rich in content, were retained by using substantive codes closely resembling the original expressions and by avoiding premature classification. Gradually raising the level of abstraction and continuous movement between concrete and abstract reasoning were a means of reaching a sufficiently high level of abstraction. An overall assessment of the generality of the theory is not possible until later in family nursing practice.

Control as an evaluation criterion for a substantive theory refers to the extent to which the users of the theory are able to use the theory to examine practical interactive situations and to predict its starting points, progress, and outcomes (Chenitz and Swanson 1986, Glaser and Strauss 1967, Hutchinson 2000, May 1986). The theory could provide caregivers with the possibility of paying more systematic attention to impairment-related issues in families while working with them. It can also serve as a tool for evaluating their own work. However, the assessment of these possibilities in a practice setting will occur later.

■ Assessment of the research process
It has been claimed that a positivistic notion of objective, external reality and of a neutral observer generating knowledge is an underlying principle in both Glaser's and Strauss's thinking (Keddy et al 1996). In particular, Strauss's (1987) method of analysis has been considered an example of a mixture of qualitative and quantitative analysis because of its painstaking preciseness, mechanistic approach, and strict rules of inference (Roos 1989). On the other hand, it has been suggested that many studies claiming to have used ground-

ed theory methodology have in fact misunderstood its theoretical underpinnings (Becker 1993, Benoliel 1996). The method may have turned into a goal instead of capturing informants' experiences (Charmaz 2000).

In the initial stages of the research process it was necessary to clarify the principles of the use of the approach so as not to let the differing views interfere with the analysis. The starting point for this study was the conception of relativity rather than objectivity of reality (Schwandt 1994). An attempt was made to internalise the principles of the approach so that it was possible to modify its individual procedures to suit the research practice (Annels 1996, Becker 1993, Stern 1994, Wilson and Hutchinson 1996). For example, the coding paradigm of Strauss and Corbin (1990, 1998) was used as a broad tool instead of rigidly adhering to the guidelines outlined by the authors.

One of the weaknesses mentioned in the literature is that some grounded theory studies have only used some of its procedures. They may have, for example, failed to employ theoretical sampling, or the combination of data collection and data analysis has not been adequate (Becker 1993, Wilson and Hutchinson 1996.) In this study the data collection and analytic phases proceeded simultaneously. Conceptualisation included a cycle of alternation between inductive and deductive reasoning, which meant that data were collected using theoretical sampling (Glaser and Strauss 1967, Strauss and Corbin 1990, 1998).

As seen from the researcher's perspective, the most demanding stage in the study was when a large part of the data was in the open coding phase. It was too early to outline the totality, and there was a multitude of unconnected details. The work was time-consuming and sometimes frustrating because of the slowly emerging end results (Backman and Kyngäs 1999). Supportive research supervision was of great importance in this phase (Stern 1994). The large number of substantive codes complicated data management, and although the decision to link the substantive codes with individual interviews facilitated recollection of details, the analytic process required absolute concentration. Since the data management nevertheless seemed adequate, a decision was made not to use computer software designed for analysis of qualitative data. This was done to retain a close connection with the data (Strauss and Corbin 1998).

Many grounded theory studies have been criticised for being descriptive, and for not providing answers to the why questions (Becker 1993, Benoliel 1996, Kendall 1999). The capacity of this theory to explain the interaction process between caregivers and families expecting an impaired child comprehensively and vividly so that it can be used for developing nursing practice, nursing education, and administration will be assessed later (May 1986, Miller and Marcel 1999).

The study indicated that grounded theory is a diverse tool for investigating interaction as a social psychological process. However, the duration and the multiple phases of analysis challenge the investigator's perseverance and ability to move flexibly from one level of abstraction to another.

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