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*Résumé*

*Meilleures pratiques en matière de recherche*

# La théorisation ancrée de Glaser, une base pour la recherche en sciences infirmières

**Cheri Ann Hernandez**

La théorisation ancrée de Glaser désigne une puissante méthodologie de recherche capable d'éclairer les comportements d'une clientèle dans un milieu donné. Elle convient donc particulièrement bien à la recherche en sciences infirmières. Les infirmières chercheuses ont recours à cette approche plus souvent qu'à toute autre méthode d'analyse qualitative, en raison des enseignements qu'on peut en tirer sur l'expérience des clients et de ses résultats positifs. L'application de la théorisation ancrée, toutefois, suscite beaucoup de confusion. L'auteure présente les éléments clés de la méthode, les questions qu'elle soulève et ses implications pour l'avancement des connaissances en sciences infirmières. Les observations découlant des recherches fondées sur la théorisation ancrée permettent d'instaurer des mesures pour améliorer les relations entre infirmière et client, la qualité des soins et, en définitive, la qualité de vie du client. En outre, elles peuvent servir à élargir les connaissances puisque la solide théorie de niveau intermédiaire qui en résulte peut être soumise ultérieurement à une évaluation quantitative.

Mots clés : recherche en sciences infirmières, théorisation ancrée, qualité de vie

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*Best Practices for Research*

# Getting Grounded: Using Glaserian Grounded Theory to Conduct Nursing Research

**Cheri Ann Hernandez**

Glaserian grounded theory is a powerful research methodology for understanding client behaviour in a particular area. It is therefore especially relevant for nurse researchers. Nurse researchers use grounded theory more frequently than other qualitative analysis research methods because of its ability to provide insight into clients' experiences and to make a positive impact. However, there is much confusion about the use of grounded theory. The author delineates key components of grounded theory methodology, areas of concern, and the resulting implications for nursing knowledge development. Knowledge gained from Glaserian grounded theory research can be used to institute measures for enhancing client-nurse relationships, improving quality of care, and ultimately improving client quality of life. In addition, it can serve to expand disciplinary knowledge in nursing because the resulting substantive theory is a middle-range theory that can be subjected to later quantitative testing.

Keywords: chronic illness, clinical nursing research, grounded theory, psychosocial aspects of illness, quality of life

Grounded theory has been described as an inductive research methodology for the generation of substantive or formal theory using qualitative or quantitative data generated from research interviews, observation, written sources, or some combination thereof (Glaser & Strauss, 1967). The purpose of grounded theory is to generate "concepts and their relationships that explain, account for and interpret the variation in behaviour in the substantive area under study" (Glaser, 1992, p. 19).

Grounded theory was first developed in the discipline of sociology but is now used in fields such as business, education, medicine, nursing, psychology, public health, and social work. It has become so popular in nursing that it is now the most frequently cited methodology for use with qualitative data (Loiselle, Profetto-McGrath, Polit, & Beck, 2004). Nurses choose grounded theory methodology to conduct their research because of its inherent power to provide a deeper understanding of their clients' worlds and thus give them the ability to make a beneficial impact

 

on those worlds. Unfortunately, many individuals who use this methodology misapply some of its techniques or fail to use the method fully (Glaser, 2005b). The purpose of this article is to demystify some of the confusion that has surrounded grounded theory, provide a succinct summary of this methodology, and pinpoint some problem areas in order to promote better use of grounded theory by nurse researchers. The article focuses on grounded theory as research methodology (Glaser & Strauss, 1967), as currently delineated by Glaser (2003), rather than on the many different approaches to grounded theory such as feminist grounded theory (Wuest, 1995) or constructivist grounded theory (Charmaz, 1990). It may be beneficial as a guide for nurse researchers and graduate students conducting Glaserian grounded theory studies and to nurse educators teaching research methodology courses.

Glaser (1965) first published a description of grounded theory methodology, in an article in *Social Problems,* as the "constant comparative method," a term that is frequently used as an alternative label for grounded theory. The article was subsequently published verbatim as *the* method of data collection and analysis of grounded theory (Glaser & Strauss, 1967). Much of the current confusion about grounded theory stems from the later collaboration between Strauss and Corbin (1990), who together published two books and several articles on "grounded theory" but did not acknowledge that their method was different from Glaserian grounded theory until they published their final book (Strauss & Corbin, 1998, pp. 10, 12). The method described in that book, published after Strauss's death in 1996, deviated completely from original grounded theory methodology (Glaser & Strauss, 1967) because of its descriptive, deductive, and verificational focus — as opposed to grounded theory's explanatory, inductive, and discovery focus. Most recently, Corbin (2007) has called their method Straussian Grounded Theory and has asserted that it is not a research methodology but rather a qualitative data analysis approach. Researchers need to be aware of these distinctions when choosing a methodology for their work. The focus in this article is on grounded theory as originally developed (Glaser, 1965; Glaser & Strauss, 1967) and as consistently delineated by Glaser as a general research methodology (Glaser, 1978, 2003). The emphasis is on the "how" of conducting Glaserian grounded theory and not on philosophical orientation, which is beyond the scope of this discussion.

## Overview of Glaserian Grounded Theory

Nurses who want their research results to have practical significance must have a good understanding of grounded theory methodology and conduct their research accordingly. There are two major types (or modes)

of grounded theory: discovery mode and emergent-fit mode. Most researchers use the discovery mode. The *discovery mode* of grounded theory is that published in Glaser's numerous books on grounded theory and is used to "discover" a substantive theory as it emerges during the research process. The *emergent fit mode,* first identified by Glaser (1978), follows grounded theory methodology in every way except that the researcher begins with an existing, plausible theory and then allows the data collected to correct (modify) this theory. In the emergent fit mode, the grounded theorist is not doing the grounded theory all over again but, rather, comparing the new data with the theory, to determine how well the chosen theory fits this new area (Glaser, 2001, p. 104). The type of theory discovered or modified using the emergent fit mode could be a substantive theory or a formal theory. For example, Compton (2002) used the emergent fit mode — starting with Hernandez's (1991) theory of integration in type 1 diabetes — to discover a *substantive* theory of integration in Crohn's disease. However, another researcher might decide to begin with the theory of integration and look at integration of new children (by birth or adoption) into families, integration (merger) of companies, product lines, and so on. This latter example of research would end with the discovery of a *formal* theory of integration.

There are two major assumptions about grounded theory. The first is that in every substantive (empirical) area there is "something going on" — that is, there is a problem that participants are trying to resolve, although this resolution process often occurs unconsciously. The second assumption is that the problem, and its resolution, will emerge through the use of the constant comparative method of analysis, as long as the researcher remains *theoretically sensitive* (open to what the data are disclosing).

The following overview of grounded theory methodology is divided into three sections: theoretical sensitivity, the constant comparative method of data analysis, and write-up of the theory. Then the accepted criteria for evaluating grounded theory are delineated.

### *Theoretical Sensitivity*

"Theoretical sensitivity is an ability to generate concepts from data and to relate them according to the normal models of theory" (Glaser, 1992, p. 27). In other words, theoretical sensitivity is the ability of the researcher to be fully open to what the data are indicating and allow the substantive or formal theory to emerge from the data, rather than operating from a personal theoretical bias to which the data are force-fit.

Prior to beginning their grounded theory studies, researchers should acknowledge their preconceptions, also known as personal predilections (Glaser, 2001), about the substantive (clinical) area being researched and

do their utmost to hold these preconceptions "in abeyance" throughout the study. Major blocks to theoretical sensitivity are researchers' preconceptions, such as personal beliefs or biases regarding a particular substantive area or ideas gleaned from published articles within this substantive area. This is the main reason why the grounded theory researcher is advised not to read the literature in the substantive area until after the core category has emerged (Glaser, 1978, 1992; Glaser & Strauss, 1967). It is anticipated that this delay in reading the literature will help to keep researchers open to discovering what is in the data instead of overlaying the data with their preconceptions and force-fitting the data to these preconceptions. However, most researchers undertake grounded theory research in a clinical area whose literature is very familiar to them. Therefore, it is of utmost importance that researchers carefully identify their preconceptions and take measures to prevent these from limiting their ability to recognize what the research data are indicating.

### *The Constant Comparative Method of Data Analysis*

The constant comparative method of data analysis (sometimes referred to as CCM) is the simultaneous process, in grounded theory, by which data are collected, analyzed, and written up. Glaserian grounded theory can use quantitative as well as qualitative data and therefore is not correctly classified as a qualitative data analysis method. However, nursing researchers who use grounded theory tend to use qualitative data exclusively. Grounded theory is unlike qualitative data analysis methods because, in grounded theory methodology, data collection, data analysis, and memoing are carried out simultaneously rather than one after another in a linear manner. Research participants are selected as needed through *theoretical sampling,* a process in which participants or additional data are selected in the service of the emerging substantive or formal grounded theory. In theoretical sampling the researcher gathers more data on the patterns that are emerging by asking specific questions in subsequent interviews or by selectively sampling available written data sources. Therefore, the researcher who first collects all the data and then begins the data analysis is not doing grounded theory. In grounded theory, data analysis begins as soon as the first data are collected, and memoing of theoretical ideas takes place throughout the data analysis process and during the write-up of the theory.

***Data collection.*** Although the majority of grounded theory researchers use interview data, grounded theory can entail any type of data, quantitative or qualitative, as well as data from any verbal or written source. Interview data can be augmented through observation and written sources, such as the researcher's field notes or journals kept by research participants. Grounded theory researchers are advised to always collect

their own data, unless this is impossible due to language barriers or site access issues; audiotaping or videotaping will be essential in such situations.

The grounded theory researcher enters the field with a general curiosity to know more about a specific area but does not have definitive (preconceived) research questions or stated (a priori) hypotheses. For example, the researcher might be interested in what it is like to live with type 2 diabetes and therefore has a general question: "What is the main concern/problem of individuals with type 2 diabetes, and what accounts for most of the variation in processing this concern/problem?" (Glaser, 1992, p. 22). In addition, the nurse researcher who is relying on interview data will have some "spill" questions that allow for the emergence of information that is deemed relevant by the participants rather than adhering rigidly to a pre-set interview schedule. These general questions are designed to let participants tell their stories and "take the interview where it needs to go." Often the interview will go in a direction or to a topic that the researcher would never have predicted, but it is within these areas that the problem and its resolution will be found. Glaser and Strauss (1967) aptly describe this interviewing approach:

> At the beginning of the research, interviews usually consist of open-ended conversations during which respondents are allowed to talk with no imposed limitations of time. Often the researcher sits back and listens while the respondents tell their stories. Later, when interviews and observations are directed by the emerging theory, he can ask direct questions bearing on his categories. (p. 75)

*Theoretical sampling* is the method by which data sources (participants, written sources, observations) are selected throughout the research, as needed, rather than decided at the beginning of the research process. Emergent substantive and theoretical codes (described in the next section) are "used to direct further data collection, from which the codes are further developed theoretically with properties and theoretical coded connections with other categories until each category is saturated" (Glaser, 1992, p. 102).

***Data analysis.*** Data analysis should always be carried out by the researcher, because *immersion in the data* is essential for codes to "occur" in the researcher's head as s/he conceptualizes and labels the codes that emerge from the data. As soon as the data from the first interview or other sources are collected, data analysis begins, and it continues throughout the remainder of the study.

Data analysis can be divided into two phases based on the types of codes that are generated: In *open coding,* data are broken down into "chunks" that are given labels known as codes or categories. In later *selec-*

*tive coding*, these categories are tied together through relational statements known as hypotheses. It is important to remember that all codes derived from these two phases are emergent — that is, *all* codes emerge from (are grounded in) the data. While analyzing the data, the researcher is continuously asking, "What is this data a study of?" and "What is actually happening in the data?" (Glaser, 1992, p. 51), two general questions that relate to the two major assumptions of grounded theory (identified previously) — that is, that there is some issue or problem in the substantive area and that participants' behaviours are resolving this underlying concern.

During *open coding,* written data from interviews, field notes, or elsewhere are coded in a line-by-line manner (Glaser, 1978). Codes (also referred to as concepts, categories, or variables) are placed in the margins beside the "data chunks" (incidents) from which they were derived. These codes are known as *substantive codes*. There are two types of substantive codes: in vivo codes and sociological constructs. *In vivo codes* emerge from the language of the substantive data (Glaser, 1992, p. 45) and often conform to the wording of the participants, which is why they are known as in vivo codes (Glaser, 1978). Examples of in vivo codes are categories such as "turning point" or "minimizing." *Sociological constructs* are well-known entities in the literature and are simply recognized by the researcher as they emerge from the data. Examples of sociological constructs are "integration," "self-awareness," and "power-mongering." The researcher is cautioned against presuming that the emergent process is some mystical or ethereal process that defies reason. The opposite is true: The researcher carefully reads each incident and either attaches to it a label that accurately represents/depicts it (in vivo code) or recognizes the familiar construct that the incident reflects (sociological construct). Therefore, codes occur in the researcher's head, as s/he is immersed in the data, going from incident to incident (Glaser, 1992, p. 45).

During the open coding phase, the researcher breaks the data down into incidents that are compared with one another for similarities and differences while asking the neutral question "What category or property of a category does this incident indicate?" (Glaser, 1978, p. 39). *Properties of categories,* often called subcategories, are aspects (hence the term "properties") of categories such as causes, conditions, consequences, dimensions, types, and processes (Glaser & Strauss, 1967, p. 104).

During initial coding, incidents are compared with other incidents and the patterns found are conceptualized as codes. Later, once the substantive codes have been generated, incidents are compared with the codes that have emerged already (Glaser, 1992, p. 32). When the research reaches the point where no more indicators (properties) of a particular category are found, the phenomenon known as *theoretical saturation* is

evident. Individual categories are saturated during this open-coding process (Glaser, 1978). Open coding continues until the *core category* has emerged; this is the central category that accounts for most of the variation in a pattern of behaviour (Glaser, 1978, p. 93) in the area being researched. The core category represents the behaviour that continually resolves the problem in the substantive area (Glaser, 2001, 2003). For example, Hernandez (1991, 1995, 1996) found that, in adults with type 1 diabetes, *integration* was the core category that resolved the problem of *having two selves* — the personal self and the diabetic self. Once the core category has been identified, the researcher has a set of broad categories and their properties (subcategories), one category being identified as the core category and the others being lesser concepts but related to this core category in a manner that has not yet been determined.

After the core category has been found, *selective coding* begins. During this coding phase, only those concepts that relate to the core category are coded, and coding continues until they are all theoretically saturated. At this point the researcher reviews the categories and reflects on them, especially in written form (memos), to determine how they are related to each other. Glaser's (1978) advice to the analyst, to continually watch how s/he is putting the theory together to ensure that the cues come from the data (p. 73), is of paramount importance here. The substantive codes (categories) are related to each other through an emergent (as opposed to preconceived) theoretical code. The *theoretical code* is simply the conceptual model of the *relationship* of the core category to its properties (e.g., causes or conditions) and to other (non-core) categories. In other words, the theoretical code is the relational model through which these substantive categories are integrated into a theory but is not the substantive theory itself. For example, in a study of type 1 diabetes, Hernandez (1991, 1995) discovered the substantive theory of integration, but the theoretical code was a *basic social process* consisting of three phases.

Many different types of theoretical code are found in grounded theory studies. Probably the most predominant theoretical code is the *basic social process* first suggested by Glaser (1978), in which the substantive codes are related to each other through stages or phases. Not all grounded theory is *process* theory; there are *static* grounded theories also. However, most nursing researchers develop process grounded theories. For example, Wilson (1989) discovered an eight-stage sequential process experienced by family caregivers of persons with Alzheimer's disease. Many theoretical coding families have been identified: Glaser (1978) describes 18 but indicates that more are possible. Nine theoretical coding families are identified in *Doing Grounded Theory* (Glaser, 1998) and 22 theoretical codes are described in *Theoretical Coding* (Glaser, 2005a). One way to theoretically code a theory pictorially is to draw it in model form

(Glaser, 1978) so that it provides a schematic of the connections among the categories of the theory (Glaser, 1998). The researcher writes the core and related categories on a blank piece of paper within solid or broken circles or boxes. Then the relationships among them (found in the data during data analysis and memoing) are specified through use of uni- or bi-directional arrows or solid or broken lines and through placement before, after, above, or below one another to denote sequence, process, or hierarchy. The resulting diagram of the theory will be useful in the write-up of the theory, because it acts as a reminder to explain all of the relationships among these categories. Frequently, researchers publish these diagrams in the reports of their research, as a way to enhance reader understanding of their substantive theories (Andrews & Waterman, 2005; Engstrom, Rosengren, & Hallberg, 2002; Giske & Gjengedal, 2007; Wiitavaara, Lundman, Barnekow-Bergkvist, & Brulin, 2007).

***Memoing.*** "Memos are the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding" (Glaser, 1978, p. 83). There are several types of memo that can be used in doing grounded theory, all of which are designed to assist in the generation of the theory. Memos may describe the properties of a category, or begin to make relational connections/linkages between categories or between the properties of a category, or they can be used to capture theoretical ideas for later use. Memos vary in length from a single sentence to as long as several pages (Glaser, 1978). They can be written on index cards or on slips of paper or can even be typed and saved as a computer file, but it is important that each memo be classified, by the category to which it refers, in the top right- or left-hand corner, as this will be useful in the later writing-up of the theory. Memos also serve as a communication tool when there is more than one researcher collecting and analyzing data for a study.

### *Write-Up of the Grounded Theory*

After the constant comparative process, the researcher has numerous memos that theorize about each of the substantive categories and their properties and the theoretical code that relates these categories. These memos are now sorted, into separate piles, according to the individual substantive or theoretical codes to which they refer. The final step is to write the theory using these piles of sorted memos. The important thing to remember when writing the theory is that grounded theory methodology involves writing the research "product" at the theoretical/conceptual level — that is, writing the substantive or formal theory (explanatory level), not writing about the individual experiences of research participants (descriptive level). This does not preclude the use of illustrations in the oral or written presentation of the theory. It means that the focus of

the dissemination should be on the theory itself, and therefore that the "illustration dosage" should be carefully chosen, in the service of the delineation of the grounded theory and as appropriate for the target audience.

### *Evaluation of Grounded Theory*

Three evaluative criteria for judging grounded theory are delineated by Glaser and Strauss (1967): fit, work, and relevance. A fourth criterion, modifiability, was added by Glaser (1978, 1992). *Fit* refers to the fact that the categories, properties, and theory fit the data that have been collected; fit can be thought of as validity (Glaser, 1998). *Work* means that the categories, and the way in which they are related into hypotheses, explain the behaviour that is occurring in an area of study — that is, how the main concern of participants is being continually resolved (Glaser, 1998, p. 18). *Relevance* is achieved when the categories both fit and work (Glaser & Strauss, 1967) and when the theory deals with the main concerns of the participants (Glaser, 1998, p. 18). *Modifiability* is demonstrated when concepts, their properties, and the substantive theory can readily accommodate new data — that is, when any of them can be readily modified by new data (Glaser, 1992, 1998).

## Researcher Problems When Using Grounded Theory

Glaser (1992, 2001, 2003, 2005a) identified two main areas of difficulty for researchers who use grounded theory. Some researchers misunderstand aspects of grounded theory methodology or fail to operationalize it fully. Sometimes such problems arise because the researcher or the supervisor of the graduate student is a novice and has not been properly trained in grounded theory methodology. Glaser (1998) asserted that the learning curve for grounded theory is about a year and a half. Therefore, adequate knowledge and training, over time, is essential for those who wish to conduct grounded theory research. Attending grounded theory seminars, reading the various books on grounded theory, and participating in grounded theory research are key strategies for developing knowledge and expertise in conducting grounded theory research.

There are two additional problematic areas identified by the author over the past 15 years of supervising graduate students and serving as a reviewer of grounded theory manuscripts. One of the most common errors is failure to see that Glaserian grounded theory methodology (Glaser, 1965; Glaser & Strauss, 1967) is very different from the Strauss and Corbin (1990, 1998) qualitative analysis method, even though Glaser (1992) passionately pointed out their incongruence and Artinian (1998) identified key distinctions between them. Some researchers have tried to

combine the strategies of the two approaches and cite both sets of authors to substantiate the quality of their grounded theory product; this only intensifies the confusion. The final problematic area relates to theoretical sensitivity, particularly if this is the first grounded theory study the researcher has undertaken. Novice researchers often find it difficult to deal with their preconceptions, which can easily and subtly overlay the data even when students are warned by their supervisors about this problem. Even those graduate students whose supervisors have required them to write a one-page synopsis of their assumptions and values related to the area they are researching, and to hold these "at bay," may have difficulty doing so. Supervisors should be aware of the types of elective courses that students have taken, as these can be a source of preconceptions; for example, courses that address culture and gender differences can render students unable to recognize similarities and/or differences in the data that conflict with the course content they have learned. Clearly, the challenge is for nurse researchers and graduate supervisors to develop strategies for ensuring that they themselves or their protégés are continually open to what is in their data, instead of viewing the data through their preconceptions. Following the tenets described in *Theoretical Sensitivity* (Glaser, 1978), the most widely used book on grounded theory methodology, can facilitate this process.

## Limitations of Glaserian Grounded Theory

This section will address two limitations of Glaserian grounded theory cited by some authors: approach to the literature, and audiotaping of interviews. Glaser and Strauss (1967) warn that the researcher should delay reading the literature until the core category emerges, to ensure that the "emergence of categories will not be contaminated by concepts more suited to different [substantive] areas" (p. 37), and this caution has been reiterated as a grounded theory dictum (Glaser, 1992, p. 31). This legitimate concern is related to a potential lack of theoretical sensitivity, but most nurse researchers are required to include a synopsis of the literature when submitting their research proposals to ethical review boards or funding agencies. Glaserian grounded theory researchers have learned to acknowledge this threat to theoretical sensitivity and to take measures to enhance their openness to the data.

Although Glaser (1978) initially recommended the audiotaping of interviews (p. 21), he has more recently cautioned against this practice because of its costs in terms of time and money, the delay in data analysis and theoretical sampling, and the potential failure to develop certain skills that are essential for grounded theory research (Glaser, 1998, pp. 111–113). Most nurse researchers audiotape interviews for practical reasons:

to fulfil a requirement of ethical review boards or funding agencies, to participate in team or transcultural research, to be able to listen for tone and inflection while coding transcriptions, to have recordings and transcriptions available for secondary analysis by graduate students, or to facilitite their own related work in instrument or intervention development. Since Glaser's concerns about audiotaping are essential considerations, researchers have developed strategies for addressing them. Examples include obtaining skilled personnel and funding for audiotape transcription, taking notes during interviews, transcribing field notes, and ensuring that data analysis and memoing take place immediately after each interview.

## Concluding Remarks

Grounded theory has become one of the most popular research methodologies of nurse researchers and is a powerful methodology for use in nursing research. The product of grounded theory research is a substantive or formal grounded theory at the middle-range theory level (Glaser & Strauss, 1967). The insights gained during one grounded theory study point to the need for additional grounded theory research and have resulted in a program of grounded theory research for at least one nurse researcher (Olshansky, 1996). Alternatively, hypotheses from the new middle-range theory can be tested in quantitative research, including nursing intervention research (Hernandez, Hume, & Rodger, 2003, 2008; Hernandez, Laschinger, Rodger, Bradish, & Rybansky, 2004; Hernandez & Williamson, 2004).

Because of the potential usefulness of the grounded theory product for clients, researchers, and clinicians, it is essential that Glaserian grounded theory research be conducted in a way that is consistent with the methodology specified by Glaser and Strauss (1967). The focus of the preceding discussion has been on a concise presentation of Glaserian grounded theory methodology to promote and guide nursing research. Grounded theory, when done properly, holds great promise for gaining a deeper understanding of clients' behaviour, which can foster better client-nurse relationships and improve client quality of life and will ultimately build disciplinary knowledge in nursing.

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*Cheri Ann Hernandez, RN, PhD, CDE, is Associate Professor, Faculty of Nursing, University of Windsor, Ontario, Canada.*