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Abstract
Grounded Theory is a qualitative research method for collecting and analysing data and results into a substantive theory that is a theoretical interpretation of a delimited problem in a specific area of knowledge. In nursing, it allows to understand the process of social interaction and how the nursing team works in everyday situations. In this study we propose, based on the theoretical framework of Kathy Charmaz, to present the procedures for the application of the constructivist Grounded Theory in nursing research. Among these are the collection and analysis of concurrent data, constant comparison at all levels of analysis, initial, focused and axial coding, conducting memos, among other resources, construction of categories, evaluation and development of the theory.

Keywords
Grounded Theory, Nursing, Research Methodology

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Application of Constructivist Grounded Theory in Nursing Research

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Grounded Theory is a qualitative research method for collecting and analysing data and results into a substantive theory that is a theoretical interpretation of a delimited problem in a specific area of knowledge. In nursing, it allows to understand the process of social interaction and how the nursing team works in everyday situations. In this study we propose, based on the theoretical framework of Kathy Charmaz, to present the procedures for the application of the constructivist Grounded Theory in nursing research. Among these are the collection and analysis of concurrent data, constant comparison at all levels of analysis, initial, focused and axial coding, conducting memos, among other resources, construction of categories, evaluation and development of the theory.

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The nature of nursing as a social and humanistic discipline presupposes actions, whose interaction among the subjects involved happens regardless of contexts or situations. This social interaction is mediated by meanings attributed by these subjects to phenomena of practice whose interpretation enables building a conceptual basis, promoting the development of the area. This produced theoretical knowledge can guide being, knowing and doing nursing, towards the accuracy of the care process.

Researches, in this perspective, have methodological theoretical support in Grounded Theory - GT, which appropriates the different theoretical frameworks to be applied according to the nature of the research object and researcher’s ideas. The theory resulting from studies using GT is called substantive theory by providing an interpretation or theoretical explanation of a problem defined in a specific area of knowledge (Charmaz, 2009).

Grounded Theory was developed by Barney G. Glaser and Anselm Strauss during their research on the process of death in hospitals and presented in the book, The Discovery of Grounded Theory, in 1967, where the authors articulated strategies and advocated the development of Theories from research based on data, instead of the deduction of testable hypotheses from existing theories (Charmaz, 2005, 2006, 2009). GT provides a way of unveiling the common understanding of a certain phenomenon and its relationships from the perspective of those involved and enables the emergence of new relationships which is theoretically relevant (Andersen, Inoue, & Walsh, 2013). This approach represented a breakthrough in the field of research using qualitative methods.

Among the approaches used in GT there are the subjectivist and the constructivist ones. The objectivist approach is characterized, among other aspects, by neutrality, passivity and observer’s authority. It understands the analysis of data as an objective process. The constructivist approach presents an interpretive understanding, in which the observer's values, priorities, positions and actions affect the observations. It recognizes the subjectivities in the data analysis, which are built based on reflection (Charmaz, 2009).

The constructivist approach proposed by Charmaz (2006, 2009) assumes that people, and even the researchers, construct the realities they share. The constructivist investigation...
starts from the experience and inquires about how participants created it; thereby, both researcher and participant interpret the meanings and actions of this experience. Researchers in constructivist GT assume that both data and analyses are characterized as social constructions. So, the whole analysis is situated in time, space, culture and experienced condition.

In this perspective, the constructivist approach suits the nature of qualitative studies in nursing, which seek to understand the complex interactions built by the care subjects (Siqueira & Herdmann, 2008). Aiming to expand the possibility of applying this method, this article describes the methodological procedures based on constructivist Grounded Theory for nursing research.

**Fundamentals of Constructivist Grounded Theory**

Grounded Theory seeks to uncover what happens in research settings where the researcher is integrated, how study participants explain their statements and actions, and also questions the analytical understanding that the researcher can obtain from these data, that is, the theoretical understanding of the experience studied (Charmaz, 2009). Among its characteristic features is the exploration of the processes underlying the phenomena studied in order to demonstrate which social and psychological processes laid the foundation of these phenomena (Tarozzi, 2011).

In constructivist research, humans, while historical and social beings, are responsible for conserving or transforming the context in which they live. They also seek flexibility and adaptation and show the relation between the researcher and individuals participating in the study (Thoferhn, Leopardi, & Amestoy, 2008). Among the theoretical frameworks that can guide GT are the symbolic interactionism, the feminist theory, the post-structuralism and the Marxist theory (Morse, Stern, Corbin, Bowers, Charmaz, & Clarke, 2009), which can support research in line with the phenomenon studied.

Symbolic Interactionism is a theoretical framework often applied in nursing research because of the continuing human relationship that happens between patients and the nursing staff in the interactive process of care (Lopes & Jorge, 2005). Moreover, by enabling the understanding of human responses and uncovering the meanings attributed by individuals to those experienced situations, it values the language of speech and also the symbolic language of their behaviour (Carvalho, Silva, Oliveira, & Camargo, 2007). The Symbolic Interaction in GT, according to Charmaz (2006, 2009), results from the influence of the Chicago School of Strauss, which saw humans as active agents in their lives and around them, and that they are not passive to the social forces that surround them. Strauss brought to GT the notions of human activity, of emerging processes, of social and subjective meanings, of techniques and problem solving and of full study of action. In its theoretical perspective, Symbolic Interactionism sees society, reality and individuals as established through interaction and thereby counts on language and communication. This view assumes that interaction is fundamentally dynamic, interpretive, and this is how people create, represent and alter meanings and actions. Constructivist GT in a symbolic interactionist perspective provides an interpretive image of the world studied, and not a faithful reproduction of it.

**Methodological Procedures in Constructivist GT**

**Interviews**

In the first stage of GT, semi-structured interviews with identification data of the participants are conducted. The recommended interview is of the intensive type, characterized
by broad and open-ended, non-evaluative questions, in which the interviewer expresses interest to deepen a particular theme. This type of interview allows examining precisely speech details of an interviewee with relevant experiences (Charmaz, 2006, 2009).

Among GT features there are simultaneous collection and analysis of data, the use of the method of constant comparison at all levels of analysis, coding from the data, development of concepts rather than descriptions, conducting memos, diagrams, concept maps, illustrations to aid understanding and construction of categories.

Data Analysis

Data analysis occurs concomitantly with data collection so that the researcher can build his/her data and realize the need to expand the number of participants and/or choose the key elements that can contribute to the understanding/interpretation of the phenomenon. The possibility of increasing the number of participants characterizes the theoretical sampling, another important feature of GT that is linked to analytical and methodological assumptions of Grounded Theory. The sample is not formed a priori, but throughout the study, following the gaps in the emerging theory to strengthen and saturate categories (Tarozzi, 2011). In this step, a software can be used for qualitative data analysis in order to organize data.

Coding

Thus, with a view to prepare the three types of initial, focused and axial coding proposed by the method after the transcription of each interview, the following steps are recommended (Charmaz, 2006, 2009). The initial encoding, which fragments the data from the interviews in words, lines or data segments, entails transcribing all material collected and analysed sentences, and selecting the keywords. It is used codes "in-vivo" (i.e., the very words of the participants can name the category).

Throughout all these phases, the memos – that hold the thoughts of the researcher, record the comparisons and connections made, and indicate the issues and directions to be followed – are built. The memos have a key role in encoding the data in order to build the categories that will structure the central category. Classified as initial and advanced, early memos record reflections, explore and meet qualitative codes and direct new data collection. The advanced memos, which are more robust from the analytical point of view, determine and categorize data (Charmaz, 2009).

Focused encoding uses the initial codes or initial categories that are most significant or frequent to classify, synthesize, integrate and organize huge amounts of data. Axial coding specifies the properties and dimensions of a category, by relating the categories with subcategories and regrouping the data that were fragmented during the initial encoding to bring coherence to the emerging analysis. For Charmaz (2009), at this stage the search for the causes and conditions (if, when, how and why) of the observed phenomenon is performed.

In the theoretical coding, categories are scored and interconnected, the central category is identified and the theory is integrated and enclosed. At this stage, categories are nominated and the noun that defines the object is associated with the verb in the gerund that demonstrates the dynamic movement of these categories, and the need for an effort to define the categories as clearly as possible is highlighted (Tarozzi, 2009). The central category is established from the previous stage, characterized by the frequency with which it occurs in the data and stands out for its robustness. It is also necessary to develop a graphical representation showing the main categories and subcategories as well as the underlying processes that characterize how the phenomenon under study occurs.
Charmaz (2005, 2006, 2009) points out that to evaluate a theory, it is necessary to apply criteria and, among them, credibility, originality, resonance and utility stand out. Credibility requires that the researchers provide sufficient evidence so that, through their statements, there is the creation of an independent opinion to agree or disagree with the statements. For this purpose, experts in the studied area of knowledge can be used. The data must have the reach, number and depth required to sustain the claims.

Originality assumes that the analysis elements must present original categories, that provide new conceptual interpretations of data and evidence the social and theoretical relevance of the work.

According to the criterion resonance, categories should portray the entire study experience and evidence explicit, hidden or changeable meanings. Informants should recognize themselves in the narrated story and realize the explanation provided as reasonable. Also, it is important to highlight the connections between individuals, groups or institutions, when identified.

In the criterion utility, the analysis should offer interpretations that can be used in daily life and the analytical categories need to present the generic processes and have their tacit implications weighed, besides stimulating new research and adding knowledge. Other criteria are also highlighted, such as aesthetic merit and analytical impact (Charmaz, 2005, 2009).

To Charmaz (2005, 2006, 2009), the result of these steps are theory assumptions, which may be validated in a focus group (Tarozzi, 2011) composed of experts on the phenomenon under study to meet the evaluation criteria described above. Data from this (these) meeting(s) may be processed in accordance with the principles of GT. The theory is then structured and the meanings and actions, resulting from actions related to the studied phenomenon, are integrated from the experiences of the individuals involved. At this time, the literature review on the subject will seek to explain its logic and conceptual orientation, highlighting key ideas, recognize previous studies, position the new theory regarding these studies and justify the significance of the concepts developed by the researcher (Charmaz 2006, 2009).

**Conclusion**

Procedures for application of GT in nursing research consist of data collection through intensive interviews, preparing memos and other resources that can contribute to the construction of categories. Coding of the data is performed at three levels: initial, focused and axial. Collection and analysis of data occurs concurrently. Comparison is constant at all levels of analysis with a view to preparing concepts, construction of categories and elaboration of the theory. The relevance of using this method lies in the construction and development of theoretical foundations that can guide nursing practice from the experiences of patients and their families, nurses and nursing technicians in different care scenarios.

**References**


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