

GROUNDING THEORY - CONCEPTUAL AND OPERATIONAL ASPECTS: A METHOD POSSIBLE TO BE APPLIED IN NURSING RESEARCH

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Dantas CC, Leite JL, Lima SBS, Stipp MAC. Grounded theory - conceptual and operational aspects: a method possible to be applied in nursing research Rev Latino-am Enfermagem 2009 julho-agosto; 17(4):573-9.

This is a descriptive-reflective study based on literature and qualitative design. It aimed to discuss conceptual aspects of Grounded Theory (GT) and to present the applicability of this methodology within the nursing field. GT consists of an interpretative and systematic framework that extracts significant aspects from experiences of social actors and which enables researchers to construct theoretical frameworks and intensify expansion of knowledge. It has been shown to be an important and consistent framework for objects of study that involve human interactions and which include phenomena concerning professional practice and which have not yet been properly examined and understood according to the rigor required for the construction of knowledge in qualitative designs.

DESCRIPTORS: nursing; research nursing; nursing methodology research

TEORÍA FUNDAMENTADA EN LOS DATOS - ASPECTOS CONCEPTUALES Y OPERACIONALES: METODOLOGÍA POSIBLE DE SER APLICADA EN LA INVESTIGACIÓN EN ENFERMERÍA

Se trata de estudio de naturaleza descriptiva reflexiva, apoyado en la literatura y de abordaje cualitativa. Tiene por objetivos discutir aspectos conceptuales de la teoría fundamentada en los datos y presentar la aplicabilidad de esa metodología en el área de enfermería. Consiste en marco teórico interpretativo y sistemático que extrae de las experiencias experimentadas por actores sociales aspectos significativos que posibilitan construir bases teóricas, potencializando la expansión del conocimiento. Se muestra una importante y consistente metodología para objetos de estudio que envuelven interacciones humanas y que conforman fenómenos de la práctica de la profesión todavía no desvelados y debidamente comprendidos, mediante el rigor requerido para la construcción de conocimientos de abordaje cualitativa.

DESCRIPTORES: enfermería; investigación en enfermería; investigación metodológica en enfermería

TEORIA FUNDAMENTADA NOS DADOS - ASPECTOS CONCEITUAIS E OPERACIONAIS: METODOLOGIA POSSÍVEL DE SER APLICADA NA PESQUISA EM ENFERMAGEM

Trata-se de estudo de natureza descritivo-reflexiva, apoiado na literatura e de abordagem qualitativa. Tem por objetivos discutir aspectos conceituais da teoria fundamentada nos dados e apresentar a aplicabilidade dessa metodologia na área da enfermagem. Consiste em referencial interpretativo e sistemático que extrai das experiências vivenciadas por atores sociais aspectos significativos que possibilitam construir alicerces teóricos, potencializando a expansão do conhecimento. Mostra-se importante e consistente metodologia para objetos de estudo que envolvem interações humanas e que conformam fenômenos da prática da profissão ainda não desvelados e devidamente compreendidos, mediante o rigor requerido para a construção de conhecimentos de abordagem qualitativa.

DESCRITORES: enfermagem; pesquisa em enfermagem; pesquisa metodológica em enfermagem

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INTRODUCTION

This study is included in the *Núcleo de Pesquisa em Gestão em Saúde e Exercício Profissional da Enfermagem* (GESPEn) [Center for Research in Management in Health and Professional Exercise in Nursing] of the Department of Methodology and in the Group of Grounded Theory Studies at the Anna Nery School of Nursing of the Federal University of Rio de Janeiro.

Grounded Theory (GT) aims to understand reality from the conception or meaning people hold about a certain context or object, so as to generate knowledge, improve understanding and provide a meaningful guide for action⁽¹⁾. It consists of a methodology of qualitative investigation that extracts meaningful aspects from social actors' experiences, which permits researchers to link theoretical constructs and intensify the expansion of knowledge in nursing and other fields, such as psychology and sociology.

This study aimed to discuss conceptual aspects of the grounded theory and present its applicability within the field of nursing. This study is justified by the opportunity to disseminate this methodology, which can be used in nursing research because it enables the construction of conceptual bases that are important for designing and consolidating the theoretical corpus of this profession concerning different spheres of activity.

UNDERSTANDING THE CONCEPTUAL BASES OF GT AND ITS APPLICATION

Aiming to reflect on and discuss the conceptual and operational aspects of nursing research, we carried out a theoretical review and analyzed some nursing studies that used the method. GT consists of "a qualitative research approach that aims to discover theories, concepts and hypotheses, based on collected data, rather than using predetermined ones"⁽²⁾. It is rooted in Symbolic Interactionism (SI) and understands reality as being based on knowledge acquired about the perceptions or meanings people hold about a given context or object. Studies⁽³⁾ reveal that "GT aims to discover a conceptual model that explains the phenomenon under study and which will enable the researcher to develop and relate concepts with one another".

Other authors⁽⁴⁾ explain that GT is one of the variants inside SI, sharing space with ethnographic studies, whose emphasis is on "understanding the phenomenon as it emerges from data and not basing it on the researcher's concepts and theories"⁽⁵⁾.

This framework was developed in the early 1960s by Barney Glaser and Anselm Strauss, two sociologists who were familiar with the University of Chicago research tradition and were influenced by SI and pragmatism. GT emerged from this. GT's technical systematization and analysis procedures enable the researcher to develop sociological theories about the world of individuals' lives because it permits one to reach signification, compatibility between theory and observation, capacity to generalize and reproduce, precision, rigor and verification⁽⁶⁾.

Complementing such conceptions, GT consists of a method to construct theory based on collected data on a given reality in an inductive or deductive manner, which, through organization into conceptual categories, enables explanation of the studied phenomenon⁽⁷⁾. As a result of the application of this method, one can also establish theoretical models or reflections.

For all those who desire to work with this methodological reference, we recommend becoming involved with the object of study, mastering the GT precepts, having time available, creativity, deductive and inductive capabilities and theoretical sensitivity. The latter is specific to GT, which "is related to the quality of the researcher to perceive and understand the meaning of data and the ability to discern between what is and what is not relevant to the study"⁽⁸⁾.

It is important to highlight that GT is not based on existing theories; it is rather based on data contained in social scenarios and has no pretention to refute or prove its results but to add others/new perspectives so to clarify the studied object⁽⁹⁾.

Some considerations, concerning the specificities of this approach in relation to the remaining qualitative designs are essential. Such considerations are succinctly^(1,3-4,6-7,10-11) presented below:

- The literature review is not the initial step in the research process. Data collection and its analysis guide the researcher in the search for further information in the literature.
- Hypotheses are created from data collection and analysis and not before the researcher starts his/her fieldwork.

- Data are concomitantly collected and analyzed and the researcher describes the first reflections at the beginning of the collection process. This process is called continuous analysis.

- The method is circular, thus it permits the researcher to change the focus of attention and seek other directions, which are revealed by emergent data.

This framework employs the theoretical sampling technique, which allows the researcher to search for data in places or through the testimony of people who have knowledge about the object of study. Therefore, one can carry out research in more than one data collection field through interaction with and observation of other professionals, whenever data collection is possible. Instruments can also be re-structured and the focus of questions can be changed (aiming to specify or explore the studied object), or the way questions are asked or the way the researcher addresses individuals with a view to extract the maximum information possible.

Memos or memoranda are written records of the process of theory formulation and can take the form of theoretical, methodological or observational notes or a sub-variety of them. These are constructed during the entirety of data collection and analysis. Definitions of each are presented below:

- *theoretical notes* – when the researcher approaches the facts, s/he registers interpretation and inferences, develops hypotheses and new concepts. Then, s/he establishes connection with other already elaborated concepts, makes interpretations, inferences and other hypotheses;

- *methodological notes* – these are notations that reflect a complete or planned operational act: an instruction to oneself, a reminder, and a critique of one's own strategies. They refer to employed methodological procedures and strategies, to decisions about the study design, to problems found in data collection and to the strategies used to solve them;

- *observation notes* – are descriptions of experienced events, especially through observation and hearing. It contains the least interpretation possible.

The use of literature is limited both before and during analysis so to avoid its excessive influence on the researcher's perception; literature can hinder the discovery of new dimensions of the phenomenon.

The number of studied individuals is not predetermined in this kind of approach. It is rather determined according to the saturation principle and

theoretical sampling, noting that the latter is a process of data collection to generate theories. There is data collection, coding and analysis so as to point out events that are indicative of theories. Collection is carried out until theoretical saturation is achieved, that is, until data are repeated or exhausted⁽¹¹⁾.

We also stress that sampling is essential to initiate the process of generating a theory because it determines and controls where the next data collection, coding and analysis thereof will happen⁽¹²⁾. Thus, theoretical sampling aims to identify events that are indicative of categories. Interest is focused on collecting data about what the study participants do in terms of action and interaction. Then the researcher chooses the incidents that will be collected in the next step and where these can be found, that is, the researcher seeks for incidents and not for people *per se*.

Data collection in GT can be carried out through interviews and observations. Interviews allow the flexibility to ask the respondent to clarify issues essential to the understanding of the studied reality and to evaluate the veracity of answers through the observation of individuals' non-verbal behavior. Thus, interviews can be structured, semi-structured or open, according to the researcher's decision. Observation can also be a valuable resource of data collection because it allows understanding what cannot be orally expressed or what the individual is not able to express.

The number of individuals in this methodology is determined according to theoretical saturation. Therefore, the number of participants is not pre-established; it is rather determined by the content and consistency of data that originate from reports⁽¹³⁾. Thus, as data are collected, these are submitted to concomitant analysis aiming for theoretical saturation, which allows the emergence of potential sample groups. This procedure in GT is called continuous comparison. When data saturation is achieved, that is, when no other information is added or does not change that which is already existing, the researcher initiates a deeper and systematized analysis of data collected in the sample groups.

The circular movement is characterized by the come-and-go of data and aims to achieve theoretical saturation and the elaboration of theory through an analytical process. To summarize, the whole analytical process aims to construct theory, to provide the necessary methodological rigor for the scientific process, aid the researcher in detecting bias,

develop fundamentals, and the necessary density, sensitivity and the integration to generate a theory⁽⁶⁾.

Data analysis within this theory proceeds through three interdependent stages and given that the movement is circular, the completion of one does not necessarily impede the researcher in returning to the previous ones. These three stages are called: *open coding*, *axial coding*, and *selective coding*. The coding process aims to reduce data, which, permeated by the coding process, is essential to achieve theory. The authors⁽⁴⁾ explain that "the reduction of categories is a means to delimitate emergent theory [...] formulate theory with a small group of a high level of abstraction, defining terminology and text".

The analysis process consists in conceptualizing collected data. Initially, these data constitute preliminary codes, which become conceptual codes and then categories, whereas categories can converge into phenomena. A category can be a word or a set of words that reveals high levels of abstraction, whereas codes are concepts that can also be expressed by words or abbreviations, which together lead to abstractions and constitute categories. And a category can become a phenomenon, which constitutes common characteristic representations that lead to theory.

Open coding – consists of the first stage of the data analysis process. It is manually performed through reading interviews and submitting them to the coding process, line by line. The lines contain words or phrases that express the essence of the participants' reports⁽⁸⁾. It consists of an attentive reading in which the researcher examines, reflects, compares and makes conceptualizations based on words, phrases, paragraphs and/or gestures generated during interviews. Words/expressions are attributed to each raw data (excerpt of interview), forming preliminary codes. In a didactic way, this stage consists of 'opening' the text (raw data) that permits a closer interaction between data-researcher.

Axial coding – this is the second stage. After open coding is achieved, the generated codes are regrouped in new ways and generate the conceptual codes.

The aim is to reorganize codes at a higher level of abstraction. Thus, new combinations are then established so as to form subcategories that, in turn, will be organized and form categories so that connections are established attempting to achieve precise explanations concerning facts from the social scenario.

In this process, due to the circular movement of data, a preliminary code can become a conceptual code and this in turn, can become category and subcategories according to its representativeness and occurrence in the sample. It is important to highlight the fact that even a category, based on successive readings and analyses, can go back to a conceptual or preliminary code depending on the researcher's reflection.

As a strategy to construct categories, we suggest asking questions of data, such as: when does it occur, where does it occur, why does it occur, who causes it, with what consequences? With these simple questions, the process of constructing categories and phenomena is facilitated.

After the construction of categories (conceptual codes), these are compared, related and interconnected according to the paradigmatic model⁽⁶⁾. In this model, elements can be defined as the following: the *phenomenon* is the central idea/event/happening to which actions and interactions are related; *causal conditions* are the elements/situations that permit the phenomenon to emerge; the *context* is the specificity that involves the phenomenon and which conditions action/interaction; *intervenient conditions* are constituted by time, space, culture, economic situation and technology, history, personal biography, among others; *strategies of action/interaction* are identified with procedural nature (sequences, movement, changes, among others), with a goal or aim, though non-actions are also important; and *consequences* have to be considered as a result/answer, whether they are positive or negative.

Selective coding – this is the third stage and aims to refine and integrate categories, revealing the category that will be considered the central one and which permeates all the remaining and will become the study theory. All the potential of abstraction is employed in the theoretical scope of investigated/coded data, enabling the emergence of the study theory.

Thus, all categories are abstracted, analyzed, reflected on, systematized and interconnected, from which the researcher finds the central phenomenon, that is, the central category, consisting of grounded theory. We stress that in the last phase of the coding process, evidenced codes, categories and subcategories are appropriately organized so to evidence the central category that emerge from the

relation of these groupings, making explicit the experience of participants in relation to the substantive conceptual/theoretical construction.

Categorized data can be presented through diagrams and charts, which facilitates reflection about them. We stress that the researcher has to exercise/maintain a critical-reflective attitude in all stages in which subjectivity needs to flow at every moment, with a view to discover points of connection between several categories, enabling the integration of the remaining.

All these steps are essential to achieve the elaboration of a solid theory, with inter-related concepts that express, with the greatest accuracy and fidelity as possible, the object of study, aiming to contribute to the construction of knowledge about the studied reality.

This methodology has been increasingly disseminated and is used by several areas of knowledge such as education, nursing, psychology and sociology. This method has provided countless contributions to nursing. One can say it has significantly contributed to the expansion of knowledge because it is an interpretative and systematic approach that draws from the experience and reality of the involved social actors, a way to achieve reliable results that can generate actions as well as to improve knowledge.

Example of a study that employed Ground Theory

Aiming to clarify the contribution of this methodology even more, some examples of nursing studies that employed GT are presented. The majority of these Brazilian studies are products of graduate programs, master's or doctoral programs.

One of the studies⁽¹⁾ was developed with 23 nurses of two large hospitals in Rio de Janeiro, RJ, Brazil. The study aimed to: identify attitudes, expressions and/or feelings, indicated and/or verbalized by nurses, concerning the management of clients with HIV/AIDS; understand the meanings attributed by nurses to the management of care delivered to clients with HIV/AIDS; and develop a substantive theory that represented the experiences of nurses, inherent in the management of care delivered to clients with HIV/AIDS.

The central process experienced by participants was labeled *re-constructing ways of nursing management: coping with the institutional challenges and professional valorization*.

Categories that emerged in this study were: relating with the patient, generator of management of care; discussing the scenario where care is performed; seeking ways to manage care; living with barriers and facilitators for the management of care; and reflecting on the repercussions of care managed by nurses.

Other noteworthy aspects refer to the data's continuous analysis and comparison associated with theoretical sensitivity, which allow the understanding of meanings of actions and interactions that nurses develop while managing care in the hospital environment. In turn, they show their experience based in the search for new ways to reconstruct management of care, which demands from professionals' abilities and competences, focusing the client, institution and the professional function itself.

Based on the study's findings, the author concludes that when people lose their organic balance they seek for solutions in order to solve their illnesses and the health service is one of the means searched. In these institutions, the nurse, among other professionals, is one of the main ones responsible for the recovery of these individuals, especially when they need hospitalization.

In the face of this demand, nurses develop their activities focused on the hospitalized patient, where s/he uses, constructs, deconstructs and re-constructs symbols that have meanings that permit initiating the management of care. This professional, due to the complexity of his/her actions, uses strategies that permit solving the needs of patients, whether perceived by the patients or not.

The nurses' process of management of care is something dynamic that is based on a triad that values the health team, the institution and the patient, where everyone is in an ongoing relationship, and which favors the construction of symbols and meanings that originate from interactions. It is important to highlight that nurses are in the center of this triad establishing relationships/interactions.

Thus, it is worth mentioning that nurses' acts are based on meaning, which is a consequence of interaction with several different elements, and that these acts suffer direct influence from reflective awareness, which generate attributes in the management of care, mainly symbols.

The interconnection of categories in the study⁽¹⁾, carried out through maximum reduction of the coding process, aims to define elements as

constituents of the paradigmatic model⁽¹¹⁾. After the construction of codes, subcategories and categories, these are organized according to the model mentioned above, which establishes that categories need to be re-analyzed, compared, and ordered so to identify the following elements: phenomenon, causal condition, context, action/interaction strategies, intervenient conditions and consequences.

We emphasize that the application of this model aims to identify the central idea that permeates the remained categories, which will lead to the emergence of the substantive theory/theoretical model based on the interconnection of the several categories.

When the author sought to understand the nurses' experiences related to the management of care, she verified that experiences consist of a dynamic process, experienced by each professional, where there is a need to turn to strategies so that the management of care can be developed according to demand, be it from the institution or patient.

Based on the interaction established with this study's individuals and on the persistent search of the nurses' management, it was possible to verify in the comparative data analysis, from the beginning of the coding up to the categorization and connection between categories, and in each of these stages, that nurses are concerned not only with the functions they have to develop as nursing professionals but also with the functions of other professionals. Thus, nurses try to re-construct ways to manage in nursing, given the difficulties found in the reality experienced by them in the institutional sphere.

In this context, questions such as: What is the meaning nurses attribute to their management in terms of care in the organizational sphere? How do nurses conduct this management? Which is the coping process that stems from their performance? How does one begin and develop the experience of the management of care? Given these initial reflections about the studied reality, information is uncovered that originated the codes that became subcategories, which in turn became categories, culminating in the main phenomenon. This process permitted the delineation of the meaning attributed by nurses to the management of care, which is translated into the studied individuals' experiences and validated by the group to which the theoretical model is applied.

In this way, the elements of the paradigmatic model that compose the main phenomenon were

defined: *re-constructing ways of nursing management - coping with institutional challenges and professional valorization*.

Thus, elements/situations that allow the emergence of the phenomenon are: *Causal condition* - Relating with the patient, generator of management of care; *Context* - discussing the scenario where care is performed; *Intervient conditions* - Living with barriers and facilities for the management of care, identified with the procedural nature (sequences, movement, changes, among others), with an objective or goal, whereas non-actions are also important; *Strategies of Action/Interaction* - Seeking new ways to manage care is identified as the results or expectations of action/interaction in relation to a given phenomenon, result/answer, whether positive or negative; *Consequences* - reflecting on the repercussions of care managed by nurses.

Much reflection about collected and coded data is needed to achieve this frame in terms of categories that represent the elements of the paradigmatic model. We can say this is a hard and difficult work that demands dedication, constancy, concentration and deep abstraction amid a great volume of data, and the need to transcend data to develop a report of the process experienced by nurses in the management of the hospital care.

The author concludes that the noted categories constitute stages of nurses' experiences from the moment in which they are willing to manage care. Based on the analysis of categories, the bases that denote cause, effect and consequence are extracted, which identify the central phenomenon. For nurses not to lose their prestige and visibility, they need to develop their functions, previously established, acting in favor of the professional class, working assumptions about conflicts, interpersonal relationships, definition of functions. One can avoid replacement of the nurses' qualified labor force by other professionals without proper education and training provided to these professionals, which is of great value and importance for the profession.

CONCLUSION

This study had no pretension to exhaust GT, however, we aimed to present and discuss this methodology and provide those who desire to work with this perspective a better understanding of its fundamentals.

We defend GT as a methodological framework to carry out research in any field, especially in nursing, considering that it enables the construction of knowledge about little explored realities. It enables one to acquire a new perspective about reality, and thus, seek the understanding of veiled issues through the meanings social actors attribute to their own actions and interactions.

This methodology also shows promise for acquiring global and deep understanding of

nursing knowledge and a means to generate theories based on nursing practice. This way, GT is concretized as an important and consistent method to carry out research, especially in nursing, whose object of study involves human interactions. These interactions include phenomena of nursing practice and profession not yet unveiled and properly understood with the rigor required for the formulation of knowledge in qualitative designs.

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