THEORETICAL AND METHODOLOGICAL REFLECTIONS FOR THE CONSTRUCTION OF MIDDLE-RANGE NURSING THEORIES

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ABSTRACT

Objective: to reflect on strategies and procedures for the development of middle-range theories and these theories' contributions to connect abstract and empirical levels of the discipline to nursing pratice.

Method: analytic reflection study.

Results: considerations on the development of middle-range nursing theories are presented, exemplified by the Interactive Breastfeeding Theory, derived from the Conceptual Model of Open Systems, by Imogene King. Some subjects addressed are the reflexive aspects of lack of use of theoretical elements contained in the scientific literature of Brazilian nursing, especially in doctoral theses. The relevance of the debate on strategies for expanding the development of middle-range nursing theories in Brazil is defended.

Conclusion: middle-range theories, which are located at the mid-point between grand theories and practice, present characteristics of theoretical and methodological references. They enable a practical way for nurses to connect philosophical perspectives to the real world and make applications of the theory to the clinical practice, and are thus a highly relevant subject.

DESCRIPTORS: Theoretical models. Nursing theory. Nursing methodological research. Concept formation. Evidence-based nursing.

REFLEXÕES TEÓRICAS E METODOLÓGICAS PARA A CONSTRUÇÃO DE TEORIAS DE MÉDIO ALCANCE DE ENFERMAGEM

RESUMO

Objetivo: refletir sobre estratégias e procedimentos para o desenvolvimento de teorias de médio alcance e as contribuições dessas teorias em conectar níveis abstratos e empíricos da disciplina à prática da enfermagem.

Método: estudo de reflexão com característica analítica.

Resultados: são apresentadas considerações sobre o desenvolvimento de teorias de médio alcance de enfermagem, tendo por ilustração a Teoria Interativa de Amamentação derivada do Modelo Conceitual de Sistemas Abertos de Imogene King. São tratados aspectos reflexivos do não aproveitamento dos elementos teóricos contidos na produção de enfermagem brasileira, especialmente em teses de doutorado. Defende-se a relevância do debate sobre estratégias para a expansão do desenvolvimento de teorias de médio alcance de enfermagem no Brasil.

Conclusão: as teorias de médio alcance, por estarem a meio caminho das grandes teorias e da prática, guardam características de referenciais teóricos e também metodológicos. Fornecem uma maneira prática para os enfermeiros conectarem as perspectivas filosóficas da disciplina com o mundo real e as aplicações da teoria à prática clínica, sendo assunto de alta relevância.

DESCRITORES: Modelos teóricos. Teoria de enfermagem. Pesquisa metodológica em enfermagem. Formação de conceito. Enfermagem baseada em evidências.

REFLEXIONES TEÓRICAS Y METODOLÓGICAS PARA LA CONSTRUCCIÓN DE TEORÍAS DE MEDIO ALCANCE DE ENFERMERÍA

RESUMEN

Objetivo: reflexionar sobre estrategias y procedimientos para el desarrollo de teorías de medio alcance y las contribuciones de esas teorías en conectar niveles abstractos y empíricos de la disciplina en la práctica de la enfermería.

Método: estudio de reflexión con característica analítica.

Resultados: se presentan consideraciones sobre el desarrollo de teorías de mediano alcance de Enfermería, teniendo por ejemplo la Teoría Interactiva de Lactancia derivada del Modelo Conceptual de Sistemas Abiertos de Imogene King. Se tratan aspectos reflexivos del no aprovechamiento de los elementos teóricos contenidos en la producción de enfermería brasileña, especialmente en tesis de doctorado. Se defiende la relevancia del debate sobre estrategias para la expansión del desarrollo de teorías de medio alcance de enfermería en Brasil.

Conclusión: las teorías de medio alcance, por estar a medio camino de las grandes teorías y de la práctica, guardan características de referenciales teóricos y también metodológicos. Proporcionan una manera práctica para que los enfermeros conecten las perspectivas filosóficas de la disciplina con el mundo real y las aplicaciones de la teoría a la práctica clínica, siendo asunto de alta relevancia.

DESCRIPTORES: Modelos teóricos. Teoría de enfermería. Investigación metodológica en enfermería. Formación de concepto. Enfermería basada en evidencias.

INTRODUCTION

In the classification of nursing knowledge areas as proposed to the National Council for Scientific and Technological Development, the axis of theories and methodologies is recognized by the capacity to make the products of knowledge better adapted for dissemination and with wider-ranging validity. Models and theories belonging to the discipline are necessary, as well as those retranslated from other disciplines.[1] The value of conceptual models and nursing theories is a point of defense among academics, with some claiming that a profession is legitimized by its ability to create and apply theories.[2]

Even when one recognizes that nursing, as a discipline, produces new and original knowledge, one should also recognize the existence of a certain gap between theory and practice, which is commonly attributed to the failure to apply in practice the models and grand theories produced in the period of 1970 to 1980.[2] Facing this, defining strategies to create bridges between nursing theory, research, and practice is required. Among the different possibilities to reduce that gap, the production of nursing theories closer to the empirical level, especially those classified as middle-range or mid-range theories, has received increased relevance.

Middle-range theories are those that are limited in their application, fulfilling an intermediary theoretical role among the specific work hypothesis and all speculation involving a larger conceptual scheme.[3] Thus, they have been considered to have high applicability to research and clinical practice. However, there are numerous and complex strategies and methodological bases for their development, demanding the availability of more content on the theme.

A relevant review study[4] based on important international nursing journals demonstrated that even with the significant increase in nursing research, the proportion of articles employing nursing theories published in the periods of 1986-1990 and 2002-2006 remained close to 20%.[4]

Also mentioned are: the interest in and increasing necessity for nursing theories, especially middle-range and practice theories, that is observed in some countries;[5] as well as the variety and imprecision of terms employed in the theoretical field and the methodological complexity and multiplicity. Recognizing the aforementioned necessities and possibilities, this article has the objective of reflecting on the strategies and procedures for the development of middle-range theories and the contributions of these theories in connecting the abstract and empirical levels of the discipline to nursing practice.

NURSING THEORIES: CONCEPTS AND GENERAL DEVELOPMENT STRATEGIES

In concept, theory is a symbolic representation of aspects of reality that are discovered or invented to describe, explain, predict, or prescribe responses, occurrences, situations, conditions, or relationship. Theory is generally constructed to express a new idea or new view on the nature of a phenomenon of interest, and is the main method to construct a body of knowledge specific to nursing.[6] Theory is defined as one or more relatively concrete and specific conceptualizations that derive from a conceptual model and its propositions, with concrete affirmations and specific relations between two or more concepts.[7]

There are various definitions for the term "theory;" however, they serve as a reference to analyze nursing practice. They explain, each in their own way, practice through concepts that express the development of actions and that express the world

views of the professionals and have the objective of consolidating nursing as science and art in the health field.[8]

The levels of theoretical abstraction and scope vary. The metatheory has the highest abstraction, followed by grand theories, middle-range theories and, finally, nursing practice theories or specific-situation theories, considered the least abstract.[9] Since they are more concrete than grand theories – consequently having more applicable elements – middle-range theories have received more attention in research.[7]

In a way, the interest in middle-range theories is a counterweight to the discomfort disseminated in the academia-service dialog of considering grand nursing theories too far-reaching or abstract to directly orient nursing interventions.[10]

Regarding development, middle-range theories can commonly follow inductive or deductive orientations. Sometimes they can have aspects of both. Deductive strategies are based on grand theories or theoretical models, while the inductive perspective begins with data to organize and construct a new theory. The choice of one or the other orientations impacts strategy selection and procedures for the development of a theory.

The general procedures for the creation of a middle-range theory can be: induction through research and practice; a combination of nursing and non-nursing theories; derivation from other disciplines' theories that are related to nursing; or derivation from practical guidelines and standards based on research; and deduction from research and practice or from the application of grand theories.[10-11] Other authors classify procedures as such: induction from practice; induction from research; construction of concepts followed by testing in research and practice; deduction from theories of higher abstraction levels; and derived of theories from other disciplines.[12]

The Conceptual-Theoretical-Empirical structure (C-T-E) is useful when reflecting on the two types of research: one focused on creating theories and another on testing middle-range theories.[13]

The procedures for creating theories tend to consider research results (particular facts) to produce generalizing conclusions that would become the theories themselves.[14] From this perspective, induction is applied in order to create theories that are minimally linked or not linked or derived from preexisting models, basically employing data to theorize (example: Grounded Theory); or adopt conceptual models (component C) only to guide a descriptive theory that creates a theory, generating

a C-E-T type orientation;[13] alternatively, they may only utilize concepts or constructs that are more general to create middle-range or specific situation theories; for example, as in the adoption of the concept of "transition."[15]

Otherwise, procedures for testing middle-range theories demand that middle-range theory concepts and propositions be initially linked to a conceptual model, so that the theoretical test can be conducted. This flow follows the C-T-E acronym in their original order, with the research (component E) being descriptive, correlational or experimental.[13] The deduction method tends to be the most predominant. Theories produced by deduction from a conceptual model or grand theory or by employing both deduction and induction, while following the C-T-E logic, demand future testing (validation). In fact, the most classic science model (received vision) recognizes that theory testing should be pursued, based on scientific experiences.

GENERAL CHARACTERISTICS AND REFLECTIONS ON THE INDUCTIVE METHOD FOR THEORY PRODUCTION

The inductive method, starts from research and practice, Grounded Theory, Phenomenology, and other qualitative and quali-quantitative research designs that theorize from data create elements for middle-range theories.

It is understood that Care Convergent Research has characteristics that would make it better for elaborating theories for specific situations;[16] however, it also has elements that could possibly generate middle-range theories by induction.

In the international sphere, there are many theories developed by induction: Meleis' transition theory is linked to the concept of transition observed in various research by the author and collaborators;[17] the theory of family vigilance offers guidelines for nursing interventions for family members when accompanying their hospitalized relatives;[18] and the gate control theory, which was developed from clinical guidelines,[19] among others.

Nursing doctoral theses can provide direction for the production of middle-range theories.[10] However, in Brazilian nursing, there is lack of wide recognition for the potential for theory production of doctoral theses guided by the inductive method. Equally, apart from the specific case of Grounded Theory, researchers and their advisors do not focus on the fact that prescriptive or explanatory thesis models contain elements or even defined structures

already compatible with middle-range theories. Thus, a growing production of middle-range theories could be contained in the production of nursing graduate programs in Brazil, and yet they remain hidden, demanding reflection and investigation.

Considering the impossibility of exhausting the theme, the authors of this article chose to address and reflect on issues related to the deductive methodology strategy for the theoretical deduction of grand nursing theories, because middle-range theories are still rarely produced in Brazil, while respecting the higher familiarity with the process of producing theories through this procedure.

THE METHODOLOGICAL STRATEGY FOR DEDUCTION OR THEORETICAL DERIVATION OF MIDDLE-RANGE THEORIES FROM GRAND THEORIES

Deduction applies analysis, synthesis, and derivation strategies to the development of middle-range theories for nursing. In the analysis, the theorist must "dissect the whole into parts," so it can be better understood. In synthesis, information based on observation is used to construct a new concept, a new affirmation, and a new theory. Derivation consists of transposing or redefining a concept, affirmation, and theory from one context or field to another.[9] These strategies are aligned for the construction of a theory through deductive reasoning or by uniting deductive and inductive methods.

To illustrate middle-range theory deduction strategies derived from the conceptual model, the procedures developed in interactive breastfeeding theory are presented here. The aforementioned theory, developed in Brazil, is based on evidence from the scientific literature on the theme of breastfeeding, derived from Imogene King's Conceptual Model of Open Systems,[20] which was adopted to propose a systemic and interactionist vision of reality, which seemed to the authors to fit the attributes of breastfeeding. Its aim is to describe, explain, predict, and prescribe breastfeeding, examining factors that come before, influence, and are a consequence of the breastfeeding process.[21]

The point where the construction of the breastfeeding interactive theory started was the selection of the conceptual model (component C), which would guide the theory creation model, specifically the Conceptual Model of Open Systems. The conceptual component is relevant for presenting the widest-reaching framework, system, or paradigm for the theory. Although it cannot be

tested, the conceptual model guides research by offering a reference framework, limiting the questions used in research, the subject of the research, obtained responses, and which interpretation rules should be applied.[13]

For the development of this theory, three methodological strategies were employed: concept analysis; synthesis of scientific literature; and theoretical derivation;[9] as shown in figure 1.
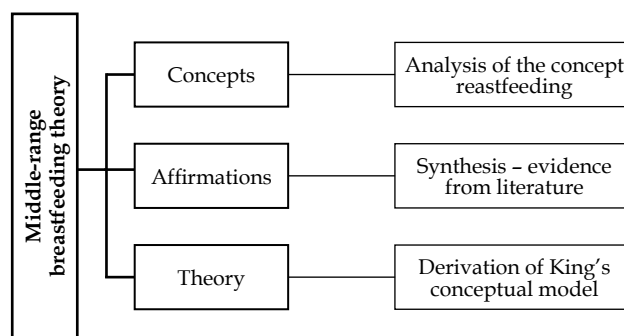

Figure 1 - Flowchart of the creation of a middle-range breastfeeding theory, following the Walker and Avant model[20]

Concept analysis as strategy for theory development

Analysis of the concept of breastfeeding was the methodological route chosen to describe the breastfeeding phenomenon and identify the concepts related to the process. Concept analysis is a research strategy frequently applied to middle-range theory development as one of its early phases. However, in Brazilian nursing, concept analysis seems to currently be more frequently explored in the validation of nursing diagnoses or to clarify concepts relevant for professional practice, without going further into the other phases of theorization.[22-25]

In the example study, breastfeeding was the concept chosen for analysis. The author searched the literature for concepts of breastfeeding, employing six stages of analysis: concept selection; definition of objectives for conceptual analysis; identification of possible uses of the concept; definition of defining or critical attributes; identification of antecedents and consequences of the concept and, definition of empirical indicators.[9] An integrative review of the literature was conducted to guide this analysis.

Concept analysis produced a set of data and information on the breastfeeding phenomenon possessing an empirical characteristic (component E). Concepts and definitions are elements that are

more compatible with theory-generating research, while numbers and quantitative research data are more aligned with theory validation.

In this theory, a synthesis product or breastfeeding definition was obtained. It aligned with the reference conceptual model (component C). The conceptual model that, in the example, presumes concepts such as system, interaction, and dynamism guided data processing and analysis, generating a definition that was compatible with the theoretical reference.

Conceptual data analysis found 11 central concepts that were employed in the construction of the middle-range theory (component T).[21]

Theoretical synthesis as theory creation strategy

With the analyzed empirical data at hand (component E), the synthesis strategy that employed the evidence found in the literature to produce theoretical affirmations was developed. The synthesis specified the relationships among two or more concepts based on evidence that derived from qualitative and quantitative research based on the literature review conducted by the author. The obtained theoretical statements were of the non-relational (theoretical or operational definition of concept) and relational types (the type that defines some kind of relationship among two or more concepts and can evidence association or causality).[9]

The synthesis analysis is allocated to the C-T-E logic as the component T. It is precisely in this phase that the middle-range theory begins its formation guided by the conceptual model (component C) employing data from the reviewed research (component E). The central elements of delimitation and connection of concepts are created through theoretical affirmations.

In Breastfeeding Interactive Theory, an example of non-relational statement is the presented concept of breastfeeding stress as a dynamic state that is augmented or diminished by the action of stressful factors resulting from interactions between women, children, and the environment. It involves exchanges of energy and information between women, children, and the environment for the regulation and control of stressful factors in breastfeeding, which can be internal or external to the mother-child binomial. As an example of relational affirmation, there is the relationship between the concepts of the dynamic interaction of mother and child, time, and stress: the dynamic interaction

between mother and child modulates the length of time of breastfeeding and stress.[21]

Theoretical derivation in middle-range construction

The development of Breastfeeding Interactive Theory applied theoretical derivation from the discipline's most far-reaching conceptual model. Derivation is a creative path, focused on developing theories in a new field in which it is required: the ability to see the analogic dimension of the phenomenon in two different contexts or fields of interest; and the skill to redefine and transpose content and/or structures from one context or field to another.[9] The derivation was conducted based on Imogene King's conceptual model.[20-21]

Utilizing general procedures for middle-range theory formulation, what was labeled theory derivation in the example would be better expressed as deduction from theories of higher abstraction levels.[5,10] This is because, in this classification, derivation refers to the process of adopting a parent theory from another discipline or field for derivation. However, through the deductive method, a middle-range theory will be derived from more abstract elements contained in grand theories and conceptual models. For example, the theory of goal attainment was derived from King's conceptual system, according to the logic contained in the C-T-E model (conceptual-theoretical-empirical),[7] and represents the element "T" in the structure. Thus it is correct to understand that interactive breastfeeding theory[21] (Component T) was a theoretical derivation from a conceptual model (component C).

It is worth emphasizing that component C had already been used to guide the concept analysis of the phenomenon (component E). However, since the middle-range theory was intentionally aligned with the conceptual model, it was repeatedly applied as a guide for the construction of the theory elements during the generation process of the theory itself.

REFLECTIONS ON THE USE OF CONCEPTUAL-THEORETICAL-EMPIRICAL LOGIC AND OTHERS IN THE STRATEGY FOR THE EXPANSION OF THE DEVELOPMENT OF MIDDLE-RANGE NURSING THEORIES IN BRAZIL

As can be noticed in deductive procedures that follow the C-T-E logic, the nursing models or grand theories can serve as bases for the derivation

of a significant number of middle-range theories or specific situation theories. In a way, this has consequences that deserve reflection.

First, much of what we currently know of nursing theories in Brazil refers exclusively to knowledge of the grand theories (the "C" of the C-T-E model). They are, by nature, focused on producing more generic statements, abstract and, in a way, philosophical or even speculative about the nature of the nursing discipline. Because of that, arguments that are contrary to the impossibility of applying theories to clinical practice would be products of an inappropriate attempt to use theories that are too general or transversal to treat specific hypotheses that address pragmatic problems with particular characteristics. Despite all the value in the grand theories, their relevance is located in the sphere of the most elevated abstractions and generalizations.

Concerning the application of the theories to Brazilian nursing practice, one review study analyzed the production of knowledge on nursing theories published in periodicals between 1998 and 2007, and results point to the fact that Brazilian publications on the theme focused especially on the grand nursing theories, with almost no middle-range or practical theories.[8] The opposite case is observed in the United States of America, with the theoretical disciplines of professional master's degree and Doctor of Nursing Practice (DNP) degree programs addressing the application of theories to practice.[10] In the American experience, middle-range theories (component T) are among the goals of these programs, especially DNP.

Although there are few publications addressing theoretical formation in graduate courses in Brazil, what seems to occur is that the teaching of the practical applications of nursing theories still tends to be especially directed toward conceptual models and grand nursing theories, which can be a complicating factor.

Even if it is already possible to notice changes in the increase of publications of middle-range theories in Brazilian nursing, there is still a reflection on the possibility of this being the moment to establish new inductive strategies. Among the possibilities is the creation of institutional initiatives that could leverage the production and testing of theories. Examples would the publication of public notices for research incentives, debates on researchers, in the national Seminar for Nursing Research; and collaboration among graduate programs, especially focusing on the inductive possibilities of the C-T-E logic.

Secondly, the possibility to deduce less abstract theories from conceptual models from nursing itself would preserve the wide range of knowledge derived from grand theories and conceptual models, guaranteeing advances in the discipline. Efforts to maintain the rich knowledge inherent to nursing seems to be both a challenge and a necessity in a society with an exponential growth of information.

For many in the social body of nursing, care has a central role, both for the discipline and for the profession. Nursing theories are justified by what knowledge they offer relating to the concepts, rules, and criteria of truth for science investigations. These would include explanatory contributions that satisfy the need for epistemological reflection on the part of those interested in the concept of nursing care.[26] This is its contribution for a nursing care epistemology.

Finally, when deriving knowledge from the grand theories to middle-range theories, the C-T-E structure contributes to the definition of research designs that will bring nursing research and nursing theories closer together both for development goals and for testing, because descriptive research produces and tests descriptive middle-range theories, whereas correlational designs test explanatory theories, and experimental designs test predictive theories.[13]

CONCLUSION

Middle-range theories, located at the mid-point between grand and practice theories, have characteristics of theoretical references and also methodological references. They provide a practical way for nurses to connect the discipline's philosophical perspectives to the real world and applications of theory to clinical practice.

An increase in the development of these theories in order to fill the gaps between grand theories and professional practice can be observed.

It is crucial to advance the study of these theories and all of their components, because they are essential for the development of nursing. Their use in practice is capable of promoting knowledge as the basis of a structure that guides the profession's actions.

Epistemological advances are understood as necessary in nursing, especially in aspects related to the Brazilian reality, among which are: to increase the development of theoretical nursing research, including those that are more far-reaching; revisit the few Brazilian nursing theories and submit them to current theory assessment criteria; invest in the translation of bibliographical research that is internationally recognized; and re-discuss the relevance of theoretical references in research.

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