

THEORETICAL ARTICLE/ESSAY

The contribution of theory building to the development of nursing knowledge

Contributo da construção de teorias para o desenvolvimento do conhecimento em enfermagem

Contribución de la construcción de teorías para el desarrollo del conocimiento en enfermería

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Abstract

Background: The evolution of nursing theory since the 1950s has had a significant impact on the discipline, education, and practice of nursing, resulting in the creation of a distinct body of knowledge.

Objective: To reflect on theory building as a contribution to the development of nursing knowledge.

Methodology: A theoretical-reflective essay was written based on research of relevant literature and the discussion with peers dedicated to the development of nursing theory.

Results: Nursing theories are models that guide reflection on nursing practice and help to support and justify nurses' actions. Theories contribute to a more complete and accurate explanation of phenomena and are useful in predicting events and solving problems in practice.

Conclusion: Nurses base their actions on theoretical knowledge and use it as a systematic guide for critical thinking and decision-making. Thus, the importance of epistemology in consolidating nursing science is reaffirmed.

Keywords: nursing; nursing theory; scientific domains; nursing research; knowledge; science and development

Resumo

Enquadramento: O desenvolvimento da teorização em enfermagem desde a década de 1950 teve um impacto significativo na disciplina, no ensino e na prática, resultando na formação de um corpo de conhecimento próprio.

Objetivo: Reflexão sobre a construção de teorias enquanto contributo para o desenvolvimento do conhecimento em enfermagem.

Metodologia: Ensaio teórico-reflexivo elaborado com base em pesquisa da literatura pertinente e discussão entre pares de estudiosos que desenvolvem concepções teóricas de enfermagem

Resultados: As teorias de enfermagem são modelos que orientam o pensamento sobre o dizer, sentir e fazer da práxis, contribuindo para sustentar e fundamentar a ação dos enfermeiros. Uma contribuição teórica consiste numa explicação mais abrangente e precisa dos fenómenos, sendo útil para ajudar a prever eventos e resolver problemas da prática.

Conclusão: Os enfermeiros baseiam as suas ações no conhecimento teórico, utilizando-o como um guia sistemático para o pensamento crítico e a tomada de decisões. Reitera-se a importância da epistemologia na consolidação da Ciência da Enfermagem.

Palavras-chave: enfermagem; teoria de enfermagem; domínios científicos; pesquisa em enfermagem; conhecimento; ciência e desenvolvimento.

Resumen

Marco contextual: El desarrollo de la teorización en enfermería desde los años 50 ha tenido un impacto significativo en la disciplina, la enseñanza y la práctica, y ha dado lugar a la formación de conocimiento propio.

Objetivo: Reflexión sobre la construcción de teorías como contribución al desarrollo del conocimiento en enfermería.

Metodología: Ensayo teórico-reflexivo basado en la búsqueda de la literatura relevante y la discusión entre pares de estudiosos que desarrollan concepciones teóricas de enfermería.

Resultados: Las teorías de enfermería son modelos que guían nuestro pensamiento sobre lo que decimos, sentimos y hacemos en nuestra práctica, y ayudan a apoyar y fundamentar las acciones de los enfermeros. Una aportación teórica consiste en una explicación más completa y precisa de los fenómenos, y es útil para ayudar a predecir acontecimientos y resolver problemas en la práctica.

Conclusión: Los enfermeros basan sus acciones en el conocimiento teórico, utilizándolo como guía sistemática para el pensamiento crítico y la toma de decisiones. Reiteramos así la importancia de la epistemología en la consolidación de la ciencia de enfermería.

Palabras clave: enfermería; teoría de la enfermería; ámbitos científicos; investigación en enfermería; conocimiento; ciencia y desarrollo



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Introduction

Nursing theory has evolved since the 1950s, resulting in significant advances in the discipline and education of nursing. In addition, it has influenced nursing practice by expanding its specific body of knowledge and promoting the autonomy of nursing as a scientific field and its recognition as a science (Bergdahl & Berterö, 2023; Meleis, 2018). This period of intense theoretical production between the 1950s and 1990s (Bergdahl & Berterö, 2023; Meleis, 2018) created the need to organize the body of nursing knowledge and subsequently led to the emergence of nursing knowledge standards and meta-paradigms (Carper, 1978; Fawcett, 2023; Meleis, 2018). The development of nursing theory is also characterized by its historical eras, during which nursing knowledge became specialized. These include the research era (1950-1970) - characterized by the development of research based on theories and aimed at unifying nursing knowledge; the theory era (1980-1990) - defined by the advancement of nursing knowledge through the use of theory to frame nursing research and practice; and the theory utilization era (21st century) - based on the principle that nursing is grounded on knowledge and evidence and aimed at providing quality care (Alligood, 2013).

Theory building is necessary to advance the knowledge of a discipline, as theory establishes and strengthens the position of the discipline within the academia. Therefore, it is essential to understand the process of theory building (theorization) to know what theory is and what it represents. It is also important to understand why theories are developed (Brandão et al., 2018; Brandão et al., 2019). There are four approaches to developing nursing theories: Theory-Practice-Theory (use of non-nursing theories or borrowed theories to redefine concepts and propositions); Practice-Theory (theory development based on clinical situations by observing the phenomenon of interest and analyzing similarities and differences); Research-Theory (selection of a phenomenon of interest, description of its characteristics, and analysis of the research findings to support a theory); and Theory-Research-Theory (modification of a theory to improve or test it based on research with possible development of a new theory; Meleis, 2018; Walker & Avant, 2019).

It is essential to specify the purpose of nursing, relating it to its socio-political and clinical-epidemiological context (Brandão et al., 2018; Brandão et al., 2019). This specification allows the structuring of the stages of theory development, by using techniques that are described in detail and carried out rigorously, while respecting theorists' autonomy (Brandão et al., 2018; Walker & Avant, 2019). The stages of theory development include the contextualization of the development of the theory and its previously defined purpose, the analysis of the concept or theory (depending on the theory development strategy), and the identification and definition of the theoretical propositions and assumptions that shape the theory, as well as the guidelines for theory utilization. The order of these stages can be tailored and varied according to each methodological approach and depends on the theorist's

reasoning, scientific rigor, creativity, and autonomy (Meleis, 2018). Theorists often ask themselves whether or not a methodological approach has been used and what type of reasoning it is based on.

In recent years, nursing has been engaged in the development of theories for professional practice, such as middle-range theories and situation-specific theories. These constructs need further analysis, evaluation, and applicability as the guidance and replicability of methodological approaches are not always clear (Chinn et al., 2021).

Part of this weakness may be related to the issue of knowledge creation in nursing, as there are few products of reflection on theory development for nursing practice based on the concepts of nursing epistemology. Thus, the questions "Do theories represent practice or not?" (ontological question) and "Do theories get closer to reality over time?" (epistemological question) still require reflection (McEwen & Wills, 2021).

The academia recognizes the importance of theories. However, the same does not always happen in professional practice, even though nursing is grounded on theories that are essential to each nurse's education (Walker & Avant, 2019). Implicit or explicit theories or thought patterns guide nurses in the provision of care. In practice, education, and even research (study problems and their theoretical-scientific frameworks), these thought patterns are often implicit and guided by *foci* such as diseases and treatments (Chinn et al., 2021). Thus, this situation does not translate into advances in the discipline of nursing (Watson, 2018).

Theory development adds robustness to a discipline's specific body of knowledge, which is essential for research, education, and clinical practice (McEwen & Wills, 2021). Therefore, the thinking of this essay's authors is permeated by questions such as "How should theories for nursing practice be built?" and "How should theorists reflect on the development of the discipline?"

In light of the above, this theoretical-reflective essay was prepared and substantiated from March 2022 to July 2023, following a bibliographic review of electronic databases and reference books and focusing on the most prominent nursing authors. Then, a collaborative discussion took place between Portuguese and Brazilian researchers who, within their research group, work with and apply theoretical and methodological references to the construction of theories in education, research, and clinical practice.

Thus, this theoretical-reflective essay aims to reflect on theory building in the development of nursing knowledge.

Development

Defining the characteristics of a theory

There are numerous definitions of the concept of theory, but simply stated, a theory attempts to explain and predict a phenomenon in sequential order, more specifically, to describe, explain, and predict reality (Meleis, 2018; Walker & Avant, 2019). A theory is established as one or more relatively objective and specific conceptualizations derived

from a conceptual model and its propositions that describe concrete and specific relationships between two or more concepts. It is an internally consistent set of statements that presents a systematic view of a phenomenon (Meleis, 2018). A theory may have a set of definitions that are specific to its concepts. It is usually constructed to express a new idea or a new view of the nature of a phenomenon of interest (Walker & Avant, 2019).

According to the scientific literature, a theory must have proven merits that contribute to the advancement of a field of research. First, a good theory should be clear and logically integrated (Watson, 2018). Second, it should provide original insights, be useful, relevant to practice, and sufficiently prescient to deliver what it promises (McEwen & Wills, 2021). Third, it must be able to describe, explain, predict (the intertwined building blocks of theory), and ultimately control phenomena. Finally, to be valid, a theory must be viewed as a fully explained set of conceptual relationships that can be empirically tested (Meleis, 2018).

Among the aspects to consider when constructing a theory are *what* and *how*, which form the domain of the theory, and *why*, which refers to the underlying dynamics that justify the selected factors and the proposed relationships and assumptions of the theory. The other aspects are *who*, *where*, and *when*, even if they may impose limitations on the relationships proposed by the theory (Meleis, 2018). These aspects contribute to the construction of a theory and its sustainability (Chinn et al., 2021).

It is also essential to distinguish the focuses of theorizing: theory generation, testing, and elaboration. Theory elaboration, in particular, plays a role in the broader process of knowledge creation. This process includes both theory generation—the creation of new theories, whether deductively or inductively—and testing of these theories, which consists of assessing whether and under what conditions they withstand empirical analysis (Walker & Avant, 2019).

Theory generation offers not only new theoretical ideas, but also testable propositions and constructs. The process can begin with the observation of a phenomenon that has not yet been explained and, from data, induce new concepts and relationships (inductive theory generation). Alternatively, solid arguments, based on existing theories, can be used to create new constructs and establish relationships (Walker & Avant, 2019).

Theory testing exposes theoretical ideas to empirical analysis. It begins with formal hypotheses, originating from existing theory. Researchers collect and evaluate data that can serve as evidence to support these hypotheses. This allows them to accept or reject the hypotheses proposed by the theory (Brandão et al., 2019).

For this reason, many nursing researchers currently conduct their research using nursing practice as a starting point for theory development. Furthermore, “theories of practice” are becoming more prominent than “classical theories” (Chinn et al., 2021; McEwen & Wills, 2021). Thus, theories provide new theoretical patterns or approaches derived from empirical data (from practice; McEwen & Wills, 2021).

The types of reasoning used in theory development

Depending on the number of phenomena, there is a tendency to start theorizing based on concept analysis. However, at this stage, it is recommended to choose the technique or model of analysis according to the concept analyzed (Walker & Avant, 2019).

The most commonly used models in nursing are suggested by the authors (Walker & Avant, 2019), but others can be used depending on the concept and the theory being developed (Meleis, 2018).

When considering the deductive strategy of theory development, it is necessary to perform synthesis and derivation (Walker & Avant, 2019). This requires the ability to visualize the analogical dimension of the phenomenon in two different contexts or fields of interest, as well as the ability to redefine and transpose the content and structure from one context or field to another (Swanson & Chermack, 2013).

In this proposal, the main components of grand theories (concepts, propositions, modeling, and assumptions) are applied to the phenomenon, with attention to selecting the appropriate grand theory for theory derivation (Walker & Avant, 2019).

The first dimension to consider is the logic upon which the theory is based (Swanson & Chermack, 2013). Questions relevant to describing the theory in this dimension include: Are the components of the theory connected sequentially? Is it a factor-type theory? Is the theory built around concepts and therefore a concatenated theory? (Meleis, 2018).

The second dimension to consider is that of the system of relations. Questions to ask include: Do relations explain elements or do elements explain relations? (Meleis, 2018). A monadic approach to theory construction views units as irreducible and unique, while a field approach analyzes the unit in relation to several mini-units (Swanson & Chermack, 2013).

However, limiting oneself to a single approach or strategy may not lead to successful theory development, because as a theory is built, the use of one strategy may lead directly to a second strategy that further develops the new theory (Meleis, 2018).

Thus, no single strategy will meet all the theory-building needs that may arise in a field of practice, or even within the discipline. Theorists need to determine the state of the knowledge base before selecting a strategy to use. Once selected, it should be used until it provides no further information on the topic of interest. When the limits are reached, it is time to switch to another strategy (Meleis, 2018).

Theory construction is an interactive process, called retroduction, which involves the sequential application of induction and deduction to arrive at an adequate theoretical formulation (Swanson & Chermack, 2013). To do this, the theorist must initially identify several specific propositions and, from them, induce a more general proposition. In the second phase of retroduction, the new proposition is used to deduce other new and more specific propositions (Meleis, 2018). It is considered that the only pure inductive strategies are those of synthesis,

since they are clearly based on data (Meleis, 2018). Each strategy is seen as simultaneously independent from and interdependent with the others. Each provides unique information to the theorist, but all generate productive ideas for theory development (Walker & Avant, 2019). The process of conceptual development varies according to the theorizing method employed by the theorist. Nevertheless, at a minimum, the process involves the development of key elements of the theory, an initial account of their interdependence, and the general limitations and conditions under which the theoretical framework is expected to operate (Walker & Avant, 2019). What emerges from this phase is an explicit and informed conceptual framework, often in the form of a model and/or metaphor developed based on the theorist's knowledge and experience of the phenomenon (Fawcett, 2022). The conceptualization phase is one of two phases that dominate the deductive component of hypothesizing and theorizing for theory building in applied disciplines. During this phase, theorists conduct scientific research on the domain, phenomenon, or problem that is at the core of the theory (Swanson & Chermack, 2013). The goal of the operationalization phase of theory-building research is practical. Thus, the operationalization of a theory needs to be confirmed and/or tested in a real-world context (Swanson & Chermack, 2013). For a theoretical framework to inspire confidence, the original description of the phenomenon, problem, or issue embodied in it must be applied and empirically confirmed in the world in which the phenomenon or problem occurs. To achieve this necessary confirmation, the theoretical framework needs to be translated or transformed into observable and confirmable components or elements (Swanson & Chermack, 2013). These components or elements may be propositions, hypotheses, empirical indicators, and/or so-called knowledge claims (Fawcett, 2022), which are approached through appropriate research methods, depending on the theory-building method adopted by the theorist. The confirmation or rejection phase falls under the practical component of applied theory building. This phase involves planning, designing, conducting, and evaluating a research agenda and appropriate studies to support and intentionally confirm or reject the theoretical framework central to the theory (Swanson & Chermack, 2013). If approached properly, this third phase results in a confirmed and reliable theory that can be used with some confidence to improve action and practice (Brandão et al., 2019). A key outcome of this application phase of the construct is that theorists can use the experience and learning from real-world applications to support, develop, and refine the theory. It is through the application of theory that practice can assess and support its usefulness and relevance for improving action and problem-solving (Swanson & Chermack, 2013). Therefore, through the application of theory, the real world becomes an essential source of knowledge and experience for the continued development of theory (Reed, 2022). Practical application is fundamental as a source of knowledge and experience for the continuous journey of (re)

constructing a theory. Although theory-building research is considered to have a dual deductive-inductive nature, a deeper understanding of how to use this dual conception is needed, as some theory-building research methods may start with deduction but become inductive at some point (Walker & Avant, 2019). In addition, the relationship between deduction and induction may be reversed in other theory-building methods.

The importance of theory building to the development of the discipline

According to the current stage of knowledge development in nursing, the importance of theory building is consensual because it constitutes an organized and systematized way of identifying and expressing key ideas about the nature of practice by giving meaning to knowledge (Watson, 2018).

The history of the discipline of nursing, particularly the works of the authors who marked the emergence of modern nursing, reveals an intense movement of theory building in the United States since the 1950s. This movement aimed to respond to one of the major challenges of the discipline of nursing, namely the distinction between nursing knowledge and medical knowledge as a condition for equal but differentiated (care) practices (Aligood, 2014). Currently, the construction of nursing theories focuses on consolidating the knowledge already produced to answer the question "What is nursing knowledge?" (Brandão et al., 2018).

This need for clarification emerges in a broader theoretical context within the health sciences. It is a concept on which nursing is evolving as a discipline and profession, based on an important part of its social mission (Fawcett, 2022). To understand nursing care (Reed 2022; Rodgers, 2021) without confusing it with that of other health professionals, a process of self-definition and self-clarification must take place. Most importantly, nursing needs to know how to explain - to itself and others - why the development of a clear and meaningful professional language is essential (Watson, 2018). To achieve this, theory building is of paramount importance and relevance.

There are two main reasons for developing nursing theories (Meleis, 2018). On the one hand, theory development is a means of clearly establishing nursing as a profession (Watson, 2018; Reed, 2022). On the other hand, the importance of theory development is justified by its intrinsic value. Simply put, theory can help nurses develop and enrich their understanding of what practice is and what it can be (Meleis, 2018; Brandão et al., 2018).

In other words, based on the concept of caring, which is increasingly transversal in the field of health, it is possible to identify and assume which specific aspect of caring is the responsibility of nursing (Queirós, 2022).

Returning to the initial idea that theory gives meaning to knowledge, while systematically identifying the main ideas about the nature of practice, it is necessary to emphasize the need to clarify the type of knowledge on which the profession is based (Watson, 2018). This type of knowledge is produced by academia and disseminated through publications, where nurses' practical and indi-

vidual knowledge needs to be supported by disciplinary knowledge. When disciplinary knowledge does not support professional nursing practice, a theory-practice gap is created. This gap can manifest itself in two ways: first, in the questioning of whether the theory constructed is relevant or irrelevant to practice, and second, in the questioning of the process of knowledge translation. Moreover, if nursing theory is irrelevant to practice, then it cannot be considered nursing knowledge (Watson, 2018). Concerning the development of basic sciences, the 1960s saw an increase in nursing's contribution to social and humanistic research at the expense of biological and exact research. This was nursing's effort to distance itself from the medical field while pursuing its process of scientific legitimization (Walker & Avant, 2019). However, the question arises as to whether this movement has led to an effective clarification of nursing, or whether it has merely reflected nursing's search for itself in identifying the phenomenon (or the perspective of the phenomenon) that distinguishes it in the field of health sciences and professions.

Thus, in the ongoing construction of the discipline and profession in which nursing currently finds itself, the theoretical constructions of certain phenomena seem to be specific to nursing.

One of the reasons for nursing's constant shift between the so-called exact sciences and the social and human sciences is the complexity of the subject of nursing, which is situated in an equally complex environment whose variables - physical, emotional, cultural, spiritual, and developmental - have an undeniable and ever-changing influence.

The complexity of this dyad - the person in their context - has led to frequent and plural changes in health teams, with the emergence of various interdisciplinary and interprofessional boundaries. This has required nursing to constantly redefine its role and status (from the unitary and integral perspective that has long been assumed) and support the need for a basic science of nursing, embodied in the construction of theories of different levels of abstraction and generality (Rodgers, 2021).

Classical Roman philosophy states that "nothing that is human is alien" to the human being. This idea fits well with the ontological and functional scope of nursing, making it more necessary than ever to be able to identify what distinguishes nursing from others. It is the constant shifting of nursing between its complex ontology (because it is unitary and integral) and its plural and equally complex functionality that makes it possible to develop the different ways of reflecting on and affirming nursing - the theories - and the different ways of doing nursing - the practice.

Regarding the construction of nursing theory, several authors have assumed the importance of middle-range theories in an attempt to bring grand theories closer to professional practice and to overcome the identified theory-practice gap, as well as the obstacle it has constituted to the effective development and consolidation of nursing (Leandro et al., 2020; Meleis, 2018; Walker & Avant, 2019). However, the risk of widening this gap must be

recognized if the development of middle-range theories is not based on grand theories of nursing (Vila-Henninger et al., 2022; Mukherjee et al., 2022) or, as previously assumed, on nursing science.

In this regard, the question arises as to whether researchers who produce middle-range theories on a countless number of topics are truly developing nursing science or merely producing a vast patchwork of applied science that is unrelated to the discipline as a whole (Walker & Avant, 2019; Toole, 2021).

This questioning should not be seen as limiting the construction of middle-range theories, whose importance is affirmed by the disciplinary support they provide for professional practice. Rather, it demonstrates the importance of considering the grand theories of nursing as fundamental and paradigmatic guidance.

Another aspect to consider when constructing nursing theories is the method used to construct them, namely induction and deduction. Given the different research logics, the starting point for questioning the phenomenon or object of study, and the use of similar methodological data collection and analysis tools, it is essential to adopt a paradigmatic positioning that seeks coherence between the elements (Walker & Avant, 2019; Watson, 2021).

Conclusion

This theoretical-reflective essay confirms that the construction of nursing theories must clarify the specific field of nursing and consolidate nursing knowledge. However, considering that the great nursing theorists turned to other disciplines of knowledge to support the construction of their theories, the questions "Do all nursing theories need to be based on nursing theoretical and scientific references?" and "If nursing theorists develop knowledge based on other disciplines, does it add less value to nursing?" remain for future research. The problem or phenomenon being studied determines the theoretical-scientific framework. Thus, one nursing framework or the other, or both, may be more appropriate.

Although this essay clarifies some ontological and epistemological issues, it naturally raises others regarding the development of the discipline. It advocates for the specific knowledge of nursing, but it is also open to knowledge from other disciplines as long as that knowledge transforms nursing significantly.

Finally, the development of nursing practice through theory depends on the systematic and continuous integration of knowledge into practice. Theoretical concepts and scientific evidence underpin practice, and practice leads to reflections, questions, and challenges that require the development of further theoretical concepts and theories to underpin the same practice. Moreover, it is this cyclical articulation between theory, action, and reflection that drives the development of nursing science.

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