

HISTORICAL EVOLUTION OF THE CONCEPT ENVIRONMENT PROPOSED IN THE ROY ADAPTATION MODEL

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The concern for the development of concepts becomes even more important when we report to its use in Nursing theories, in which some concepts are considered central, such as person, environment, health and nursing. This study aims to discuss the historical evolution of the environment concept used in the Roy Adaptation Model. The method of analysis the study was based on is the evolutionary conceptual analysis of the concept Environment of the Roy Adaptation Model. According to the research results, Environment is introduced as the second major concept in the Roy Adaptation Model. In this theorist's interpretation of the environment, we notice her interest in surpassing the mechanistic point of view upon which the first version of the model was based. The approach of the concept of interaction between people and groups seems to represent an improvement, influenced by the current thoughts that are preeminent in nursing.

DESCRIPTORS: adaptation; nursing theory; concept formation

EVOLUCIÓN HISTÓRICA DEL CONCEPTO ENTORNO PROPUESTO EN EL MODELO DE LA ADAPTACIÓN DE ROY

La preocupación con el desarrollo de conceptos se vuelve más importante cuando nos reportamos para su uso en teorías de Enfermería. En ellas, algunos conceptos son considerados centrales, tales como persona, ambiente, salud y enfermería. Este artículo visa examinar la evolución histórica del concepto de ambiente utilizado en el Modelo de Adaptación de Roy. El método de análisis en que el estudio fue basado es el análisis conceptual evolucionario del concepto Ambiente del Modelo de Adaptación de Roy. De acuerdo con los resultados del estudio, Ambiente es introducido como el segundo concepto más importante en el Modelo de Adaptación de Roy. En la interpretación que la teórica hace del ambiente, notamos su interés en ultrapasarse el punto de vista mecanicista en que la primera versión del modelo era basada. La propuesta de interacción del concepto ambiente con personas y grupos parece representar una mejoría, influenciada por los pensamientos corrientes que son predominantes en la enfermería.

DESCRIPTORES: adaptación; teoría de enfermería; formación de concepto

EVOLUÇÃO HISTÓRICA DO CONCEITO AMBIENTE PROPOSTO NO MODELO DA ADAPTAÇÃO DE ROY

A preocupação com o desenvolvimento de conceitos torna-se mais importante quando nos reportamos para seu uso em teorias de Enfermagem. Nelas, alguns conceitos são considerados centrais, como pessoa, ambiente, saúde e enfermagem. Este artigo visa examinar a evolução histórica do conceito de ambiente utilizado no Modelo de Adaptação de Roy. O método de análise em que o estudo foi baseado é a análise conceitual evolucionária do conceito Ambiente do Modelo de Adaptação de Roy. De acordo com os resultados do estudo, Ambiente é introduzido como o segundo conceito mais importante no Modelo de Adaptação de Roy. Na interpretação que a teórica faz do ambiente, notamos seu interesse em ultrapassar o ponto de vista mecanicista em que a primeira versão do modelo era baseada. A proposta de interação do conceito ambiente com pessoas e grupos parece representar uma melhoria, influenciada pelos pensamentos correntes que são predominantes na enfermagem.

DESCRIPTORES: adaptação; teoria de enfermagem; formação de conceito

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INTRODUCTION

Nursing knowledge has developed throughout the years with a notable search to establish a range of conceptualizations that can characterize and define nursing science. In this respect, empirical theory is a manifestation of the empirical standard of knowledge, which can be viewed as knowledge derived from traditional ideas on science, observed in reality, and verifiable by others⁽¹⁾.

However, empirical knowledge involves the search for a solid conceptual and philosophical basis, which aims at subsidizing description and understanding of phenomena associated to that range of knowledge. Therefore, the development of concepts in Nursing is a point of great relevance in current debates.

However, there are still differences in the way concepts are understood. For some authors, concepts can be viewed as something continuous that goes from the most concrete to the most abstract⁽¹⁾. In other cases, they are considered as abstractions that reflect phenomena⁽²⁾. What can be considered common about those views is that concepts are mental formulations of an existence that can be more or less complex.

In Nursing, we have faced situations that interfere with the development of concepts for the profession. Among the commonest of these are: usage of vague terminology, ambiguity in the definition of important concepts for Nursing, and inconsistency among theories. Many concepts are widely used with diversified definitions, thus delaying the scientific development of the profession⁽³⁾.

The views of Nursing on concepts reflect the diversity of ways to approach this issue. These visions include: focus on relations among concepts and empirical or remarkable reality, arguing that concepts are essentially symbols for objective elements in the world; emphasis on human mind and thought; relation between a concept and a specific word⁽³⁾.

In the process of analysis of concepts, two main thoughts can be identified: the essentialist and the evolutionary. In the first, the purpose of analysis is to define the concept of interest in terms of its critical attributes or "essence", whereas in the evolutionary thought, one considers concepts as being dynamic, "indistinct" rather than finite, absolute and "clear crystal", dependent on the context, and having pragmatic usefulness or purpose.

The concern for the development of concepts becomes even more important when we report to its use in Nursing theories. In them, some concepts are considered central, such as person, environment, health and nursing. According to what has been previously exposed, these concepts suffer variations in their definitions according to the view of the theorist.

Specifically with regards to the environment concept, Roy asserts that there are at least four different ways through which it is examined in Nursing studies. In the first approach, the concept is called underspecified meta-paradigm construct, which is compatible with the notion of environment as a mediating presence. The second view sees environment as the communicative context, that is, the phenomena under study exist in the social and historical position of the person. The third way to conceptualize the environment is to define it as social positions of an open field, where the nurse's social position can be seen as positive when related to patients and negative for the profession's institutional subordination to medicine. Lastly, the environment is still conceptualized as a survey list of extraneous variables, where effects that modify the variables of a hypothesis diminish the generalization of theories⁽⁴⁾.

Roy is the author of one of the most diffused Nursing conceptual models. The development of her conceptual model began when she was still a graduate student in the 60's under Dorothy Johnson's orientation, in a time when nursing was starting its search to increase its knowledge base, although still under the influence of theoretical thinking by philosophers and psychologists.

Originated from humanism and system's theory, Roy started the development of her model, by presenting its base while undergoing her master's degree course. At the beginning of the 70's, she published articles in which she showed the bases of her model for nursing practice. In 1976, she launched her first book containing the description of the basic concepts (person, environment, health and nursing goal). In addition, the publication introduced the specific concepts of her proposal (adaptation, stimuli, behavior and adaptive modes). Roy continued to improve her model by launching books in 1981, 1984, 1986, 1991 and 1999. Additionally, publications in various journals sought to contribute to the understanding and application of her model⁽⁵⁻¹⁶⁾.

This article was developed starting from the previous knowledge on Roy's Adaptation Model, and discussed the historical evolution of the *environment* concept used in the mentioned model, aiming at contributing to the development and appropriate application of it in our professional reality.

METHODS

The study is based on the evolutionary conceptual analysis method. According to this vision, a concept is considered to be an abstraction that is expressed in some way. Such concepts are formed by the identification of common characteristics of a group of objects or phenomena, and by the abstraction and grouping of those characteristics with their ways of expression⁽²⁻³⁾.

The method of evolutionary analysis of concepts involves the following primary activities: identifying the concept of interest and expressions associated with it; identifying and selecting a field for data collection, which can be cognitive, professional or even political; collecting relevant data to identify both the attributes of the concept and the contextual basis of the concept, including interdisciplinary, social, cultural and time variations; analyzing data which are most related to the characteristics of the concept; identifying a sample of the concept, if appropriate; identifying outcomes and hypotheses to promote the development of the concept. Many of those activities occur simultaneously and are complementary and interdependent. In this work we limited ourselves to develop our analysis on the four first activities mentioned⁽³⁾.

In the collection and management of data one emphasizes induction, aiming at discovering approaches focused on the identification of relevant aspects of the concept. In this phase, the data considered include the situation, time, social, cultural and disciplinary context for the application of the concept. The focus on the exploration of contextual aspects of the concept seeks to achieve an understanding of situations in which the concept is used, the use of the concept in varied situations, and its use by people with potentially diverse perspectives.

The concept of interest chosen was environment, considered one of the four main concepts to be defined in Nursing theory. The realm for data collection was Roy's Adaptation Model. The

main works published by the author on the model were verified, including all books and the main articles published in journals. The reading and careful analysis of each of the works allowed us to capture the historical evolution of the environment concept, specifically its time and social and cultural variations.

RESULTS AND DISCUSSION

The Roy adaptation model

This description of Roy's Adaptation Model was based on the second edition of the work entitled *The Roy adaptation model* by Roy and Andrews, the latest book published by the theorist on her model up to the moment we wrote this paper⁽¹⁵⁾. As the adaptation concept has already been previously defined, we proceed to describe the other concepts presented by the authors.

For them, adaptation level represents conditions of life processes, which are described at three levels: the integrated, the compensatory and the compromised. Concerning the integrated level, structures and functions of life processes are working together in order to meet human needs. About the compensatory level, regulator and cognator subsystems are activated to search for the integration of life processes. At the compromised level, life processes present inadequate integration, characterizing an adaptation problem.

The person is seen as a holistic and adaptive system, as a whole with parts that function as a unit for some ends. This system includes individuals or groups (family, organizations, communities and societies). When viewed as a system, the person is considered as being in contact with the environment from which he receives stimuli that demand responses, which can be visualized through behavior.

Stimuli are defined as everything that provokes response. They are divided into three categories: focal, which immediately faces the human system; contextual, which involves stimuli present in the situation that contribute to the effect of focal stimulus; and residual, which is an environmental factor that is present or not in human systems, whose effects in the current situation are not clear.

The environment, in turn, is viewed as all conditions, circumstances and influences that surround and affect the development and behavior of the human

adaptive system, considering particularly the person and earth resources. The responses produced by the interaction of the human adaptive system with the environment are divided into two categories: adaptive responses, which promote integrity in terms of goals of the human system; and ineffective responses, which do not contribute to the integrity mentioned previously.

These responses are shown through behaviors that indicate internal or external actions and reactions in a specific circumstance. These behaviors result from the stimuli process of the human system through two sub-systems: the regulator / stabilizer and the cognator / innovator. The regulator sub-system is the confronting process (used by individuals) that involves nervous, chemical and endocrine channels. The stabilizer sub-system corresponds to the regulator component, however, it relates to groups, and is associated with the maintenance and involvement of established structures, values and activities performed daily by participants in order to reach social system purposes. The cognator sub-system is a process of control used by individuals that uses four cognitive-emotional channels: perceptual and information processing, learning, judgement and emotion. The innovator sub-system is the group facing process that involves structures and processes for change and improvement.

Roy and Andrews state that it is not possible to observe how these sub-systems function directly. Their evaluation is indirectly made through the behaviors mentioned that are divided into four adaptive modes: physical-physiological, self-concept / group identity, role function and interdependence. In the first mode, the physiological part refers to the way the individual physically interacts with the environment through his organs and organic components. The physical mode corresponds to the way a collectivity shows its adaptation to basic operational resources (participants, physical facilities and fiscal resources). The self-concept mode is composed of beliefs and feelings that an individual has about himself at a certain moment. Group identity involves interpersonal relations, group self-image, social environment and culture. The role function model involves the roles that an individual performs in society or the actions associated with the infrastructure of a group. Interdependence focuses on interactions related to love giving and receiving,

respect and value among individuals, and public and private contacts of a group⁽¹⁴⁾.

In the Roy Adaptation Model, health is defined as a state and process of being and becoming, integrated and total, and the goal of nursing is the promotion of adaptation in each of the four adaptive modes.

Historical evolution of the concept environment

The historical development of the model led to several changes in the way Roy saw professional practice. In this way, concepts and inter-relations among them were altered in the search to improve the model. Specifically, the environment concept was revised several times since the author's first publication in 1970, when it was not addressed as a particular concept but was characterized as the environment in which the individual was inserted. This can be attested in the following passage: "Man, as a bio-psychosocial being, is interacting constantly with his changing environment. To cope with the changing world, he uses both innate and acquired mechanisms (...). Through these mechanisms, man attempts to respond to the demands made on him by the changing environment"⁽⁵⁾.

In those first essays, the environment was restricted to the notion of place, not considering the processes inherent to the body of the person as a possible environment. The insertion of this notion starts as the model is applied and studied. Soon in 1971, Roy discretely developed the concept of environment, saying that: "Adaptation theory views man as an organism in constant interaction with his changing environment. He has innate and acquired mechanisms that help him cope with the constant environmental changes. (...) In other words, the body adapts to the external environmental change. Similar mechanisms operate on the psychosocial level: for example, the ego defense of denial or sublimation"⁽⁶⁾.

In this sense, there is an admission that external changes associated to an internal environment, here defined as the psychosocial level that alters and demands a response from the person aiming at adaptation. Although not discussed more directly, the internal environment started to be noticed while bearing in mind that psychosocial alterations are neither touchable nor directly noticed by observing the external environment in which the person is inserted.

Roy launched a more concise definition, similar to that of 1971, in her first book published in 1976. This definition says that man interacts with a constantly changing environment and, to cope with his changing, he has certain innate and acquired mechanisms. We notice in Roy's writings that the concept environment was minimally addressed, to the detriment of other concepts. There was greater concern in defining the application of the model through the adaptive models, rather than showing the theory's major concepts in a more consistent way⁽⁷⁾.

Therefore, we can say that, in the 70's, the concept environment is presented as a notion of place. In 1971, Roy presented a definition that established a notion of internal environment (psychosocial level). Nevertheless, it was limited to the concept of place.

After the application and evaluation of the model by the theorist as well as by her collaborators and graduation students, concepts were clarified and made adequate to the proposed framework. In the 80's, the definition of environment presented in the model started to include physical, social and psychological aspects. The author clarifies the concept environment in 1980 when she asserts that the person confronts constant physical, social and psychological changes in his environment and is continually interacting with these. At times, learned or acquired mechanisms are used to cope with the changing world⁽⁸⁾.

The publication in 1980, however, refers to a summarized chapter on the adaptation model and consequently does not detail its concepts. In the book on the model published in 1981, on the other hand, Roy presents a more developed definition and includes the environment concept among its greater concepts. In that work, the author asserts that, by environment we mean simply what the dictionary says, that is, all the conditions, circumstances, and influences surrounding, and affecting the development of an organism or group of organisms⁽⁹⁾. Roy also says that further clarification of environment as distinct from internal stimuli awaits additional theoretical work in her conceptual framework.

It is important to notice that, at the beginning of the 80's, the author starts to adopt a definition that is very close to the one that would be used up to the beginning of the 90's. Nevertheless, there was not yet a clear difference between internal stimuli and internal environment. The author did not relate directly

the range of stimuli and the environment concept. There is a very clear separation between the two concepts. The stimuli are treated as ordinary components of the environment, without having a more complex view about them. It is interesting to say that the other two works launched by the author in 1984 and 1986 showed a more summarized environment concept. In those books, the concept is presented the same way, that is, the environment included all the conditions, circumstances and influences surrounding and affecting the development and behavior of the person⁽¹⁰⁻¹¹⁾.

In 1991, Roy gave a more precise definition of what she considered as being environment: "Environment includes all conditions, circumstances and influences that surround and affect the development and behavior of the person. These influencing factors are categorized as focal, contextual and residual stimuli."⁽¹²⁾ In this context, the existence of internal and external alterations is established and consequently the environment starts to be focused in that way. By confirming this notion, the theorist, in the same year, proposes that "a collective term for all internal and external stimuli is environment"⁽¹²⁾. This classification of internal and external stimuli is then extended to the environment concept, having in mind that it would represent the collectivity of stimuli to which the person is exposed. This association between the environment and stimuli is confirmed in the work published by Roy and Corliss, in which the authors assert that the environment contains input to the person or group, and includes internal and external stimuli⁽¹³⁾. It is important to say that, in this chapter, Roy introduces her first definitions of group and aims at re-adjusting her model to this new perspective.

In 1997, Roy surprises the readers by presenting new concepts based on nursing neuroscience, on Quantum Physics and on the new Cosmology. In this article, the author defends that the systems of matter and energy progress to higher levels of complex self-organization. In this search for self-organization, consciousness and meaning assume fundamental importance and are constitutive of the person and environmental integration. Awareness of self and environment is rooted in thinking and feeling, and they, in turn, mediate human action. The person and environment transformations are created in human consciousness, and the integration of human and environment meanings result in adaptation⁽¹⁴⁾.

It is interesting to note that the work published in 1997 consolidates the author's intention to integrate the *person* and *environment* concepts, which have been leading her work for so long, however, without a link as direct as the one presented in this work. A remarkable fact is that, in the book launched in 1999, this link is not as pronounced as in the previous article.

In the earlier work, Roy defines the environment as an internal world and surrounding man as an adaptive system. In a clearer way, the concept mentioned is shown just like in the 1991 edition of the book, with special consideration of person and earth resources. The author completes her idea by saying that: "an evolving universe is the description of the environment as a biophysical community of beings with complex patterns of interaction, feedback, growth, and the decline, constituting periodic and long term rhythms"⁽¹⁵⁾.

In this last definition, we notice a strong influence of post-modernity thoughts, represented especially by the idea of non-linearity and by the current concept of holism. Her concept surpasses space and body reactions. The environment is close to the notion of the complexity of the human being and to interpersonal interactions. In an article published in 2000, Roy reasserts her intention to continue working with concepts of Quantum Physics and Cosmology. She improves her view on adaptation as a consequence of the inter-relation among person, environment and conscience⁽¹⁶⁾.

In this latest work, Roy asserts that creative processes are fundamental to predict and plan the future, and then compose human consciousness, consciousness on himself and on the environment, as well as the man-environment integration. For the author, consciousness is defined as consciousness on internal and external environment⁽¹⁶⁾. Hopefully, Roy will continue her efforts to refine the concept of environment in future publications.

FINAL CONSIDERATIONS

Environment is introduced as the second major concept in the Roy Adaptation Model⁽¹⁷⁾. The association of this concept with the principle of adaptation is well defined, since adaptation is described by the author as a conscious choice of human and environmental integration, surpassing the notion

of physical change and of environment as a mere place where relations take place. The principle of adaptation suggested by the author expands to the inter-relation field, emphasizing it as part of the environment.

In the interpretation that the theorist makes of the environment, we notice her interest in surpassing the mechanistic point of view upon which the first version of the model was based. The approach of the concept of interaction between people and groups seems to represent an improvement, influenced by the current thoughts that are preeminent in nursing.

The logistic method that the theorist uses to explain her model, nevertheless, goes against the operation of the concept. This happens because, by separating and breaking down the model in different parts, while didactically organized, the notion of integration and the complexity of the environment become difficult to visualize in the holistic perspective. After being divided, the re-organization of the several concepts and the inter-relations among them leads to a fragmented view of the process.

In the course of the entire work, the author certainly proposed to be coherent in her way of seeing reality and professional practice. The major factors underpinning the evolutionary process can be noticed in the explanations of her greater concepts. However, we believe that, in order to have true appropriation of the post-modern thoughts the author says she adopts, it will be necessary to re-evaluate the systemic basis on which her model is based.

The critical analysis of a theoretical model is an exhausting task and demands deep thinking. The study of the concept environment allowed us to understand its historical and structural evolution, thereby widening the notion of the need for continuous revision of its practice and thinking.

The crucial points addressed in this analysis were: the Roy adaptation model has been gradually evolving, accompanying the trends of the profession; the constant observation of professional practice has been important in the revision of the concepts the model defends; the systemic basis suggested by Roy needs a revision since, in some moments, her post-modern ideas seem not to associate appropriately with Helson's ideas; it is necessary to keep a constant revision of the model and of its application as well, especially for the new conceptual changes incorporated by the author in the late years.

It is unquestionable that the ideas taken from quantum physics and from cosmology will promote a change of paradigms that will affect the basic structure

of the theory, which up to the middle of the 90's still presented an organization based on systems theory and a strong influence of positivist paradigm.

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