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SCIENCE, NURSING AND CRITICAL THINKING - EPISTEMOLOGICAL REFLECTIONS

CIÊNCIA, ENFERMAGEM E PENSAMENTO CRÍTICO – REFLEXÕES EPISTEMOLÓGICAS

LA CIENCIA, LA ENFERMERÍA Y EL PENSAMIENTO CRÍTICO - REFLEXIONES EPISTEMOLÓGICAS

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ABSTRACT

Objective: to promote epistemological reflections on nursing science and critical thinking. ***Method:*** descriptive study, reflective-type essay, produced from readings of classic books that deal with the philosophy of science and scientific articles taken from the portal of the Virtual Health Library through the descriptors nursing, thought, knowledge, and its synonym epistemology. ***Results:*** presents philosophical concepts related to science. Discusses the process of scientification of nursing from its history and the importance of critical thinking in the process, from the reflection of three specific themes. ***Conclusion:*** the future nurses need to be encouraged to think critically since the start of their formation, so that they may be able to organize and (re)build knowledge in the area of nursing. ***Descriptors*:** Nursing; Knowledge; Science; History of Nursing; Thought.

RESUMO

***Objetivo*:** promover reflexões epistemológicas sobre a ciência Enfermagem e ao pensamento crítico. ***Método*:** estudo descritivo, tipo ensaio reflexivo, produzido a partir de leituras de livros clássicos que versam sobre a filosofia da ciência e artigos científicos capturados no portal da Biblioteca Virtual em Saúde por meio dos descritores enfermagem, pensamento, conhecimento e seu sinônimo epistemologia. ***Resultados*:** apresenta conceitos filosóficos relacionados à ciência. Discorre sobre o processo de cientificização da enfermagem a partir da sua história e sobre a importância do pensamento crítico nesse processo, a partir da reflexão de três temas específicos. ***Conclusão*:** entende-se que os futuros enfermeiros precisam ser incentivados a pensar criticamente desde o início de sua formação, a fim de que possam ser capazes de organizar e (re)construir o conhecimento na área da Enfermagem. ***Descritores*:** Enfermagem; Conhecimento; Ciência; História da Enfermagem; Pensamento.

RESUMEN

Objetivo: promover reflexiones epistemológicas sobre la ciencia de enfermería y el pensamiento crítico. ***Método:*** estudio descriptivo, tipo ensayo reflexivo, producido a partir de la lectura de libros clásicos que tienen que ver con la filosofía de la ciencia y artículos científicos extraídos del portal de la Biblioteca Virtual en Salud a través de descriptores de enfermería, pensamiento, conocimiento y su sinónimo epistemología. ***Resultados:*** presentan conceptos filosóficos relacionados con la ciencia. Analiza el proceso científico de la enfermería a partir de su historia y la importancia del pensamiento crítico en el proceso, desde la reflexión de tres temas específicos. ***Conclusión:*** se entiende que los futuros enfermeros necesitan ser animados a pensar de manera crítica desde el inicio de su formación, de manera que puedan ser capaces de organizar y (re)construir el conocimiento en el área de la enfermería. ***Descriptores*:** Enfermería; Conocimiento; Ciencia; Historia de la Enfermería; Pensamiento.

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INTRODUCTION

Deconstruct and construct are a human praxis of knowledge that involves thinking, learning to learn and intervene in everyday practice in an innovative and ethical manner. Thus, in a philosophical historical perspective, knowledge has undergone a process of transformation, evolving from explanations such as divine causality and metaphysical entities (ancient) and theological-religious (medieval period), to a scientific maturity dependent only on itself (modernity) so that the scientific method, measurement, quantification and verification became the elements that dictate the rules of the new way to (re) build it.[1]

This way of thinking knowledge has given rise to a new way of doing science, in which the subject believes to have total control of the studied object and it (science) is responsible for responding to all their questions, breaking up with any possibility of a metaphysical construction of reality that happens to be explained based on the scientific knowledge. The scientist happens to take a leading role in society; and the man, to be seen as a thing and not as a subjective and relational being, making it impossible to practice with and for him[1], not always able to promote the good of all humanity.

Concomitant to this form of knowledge, there is the knowledge of common sense, understood as everything that is not scientific, including "all the recipes for the day-to-day as well as the ideals and hopes which make up the cover of the recipe book". The expression "common sense" was not created by people of common sense, but by those considered scientists, who think themselves above this knowledge and different from the intellectually inferior. Both forms of knowledge (scientific and common sense) express the need to understand the world from the perspective of survival and finding better ways of living, even though, nowadays, science has been, sometimes, threatening this survival.[2:10]

Nursing, as a profession and social practice, follows the footsteps of professions anchored in scientific knowledge, increasingly diverse and complex, and builds over time a body of specific knowledge, defined within a methodological and conceptual rigor, indicating the need to think and to qualify as a science, although this is a matter of debate. Even with the persistence of a debate on the scientific aspect of Nursing, it is consensus the importance of critical thinking of nurses at all levels, from the assisting practice to the theoretical deepening by the practice of research.

Given the above, three questions arise for reflection: "What is science?", "Can Nursing be considered a science?" and "How can critical thinking contribute to making science in nursing?". With the intention of finding answers to these questions, is presented, in this essay, the view of some philosophers of science and its organization; a general approach on the construction of the knowledge specific of nursing from its history, showing its scientification process; in addition to making an approach on critical thinking and its importance in the construction of knowledge. Thus, this study aims to promote epistemological reflections on nursing science and critical thinking.

METHOD

Descriptive study, reflective-type essay, structured from readings of classic books that deal with the philosophy of science, critical thinking and history of nursing and scientific articles captured by electronic search in the database of Health Virtual Library (BVS), from the use of the descriptors nursing, thought and knowledge (and its synonym epistemology), from strategies "tw: AND nursing (knowledge OR epistemology)" and "tw: nursing AND thought", with the filters full text (available), language (Portuguese and Spanish), year of publication (2009-2016) and document type (article). Later, the captured articles passed through a new selection by reading the titles and abstracts, being selected for making the study those that best contributed to achieve the previously established goals.

After selecting the material, it became possible to establish three themes for reflection: Science in a philosophical perspective, The process of scientification of Nursing, Critical thinking and the Nursing science.

EPISTEMOLOGICAL REFLEXIONS

♦ Science in a philosophical perspective

Science constitutes a function of human life and is justified only as a body that needs to be in line with the survival of humanity. Therefore, doing science is to invent solutions to observed problems, where the scientist uses the magical power of thought, that is, his/her imagination, to simulate the real before things happen. From there, models are created, as well as laws or theories that are nothing more than a simulation of what should happen.[2]

The object of science does not exist prior to its existence; it is pre-built by the science. Thus, a scientific discipline is not defined by its object of study, for it determines its object and, in its evolution, this object can vary. The very structure of a discipline is determined by social demands and the way the groups or people respond to the same.[3]

Therefore, for a profession to be considered science, it is necessary that, at some point, an individual or practitioner group produces a scientific knowledge synthesis able to attract a mass of people interested in the study of nature, since, in the absence or candidate of a paradigm, all relevant facts to its development have the chance to appear to be equally important, generating data collection at random because they do not have a reason to justify the search of a hidden information, normally limiting to casual observation and experimentation.[4]

The paradigms correspond to universally recognized scientific embodiments that provide both problems as model solutions to a group of practitioners during certain period of time[4]. They are also called curriculum and understood as mental structure, used to rule the world in order to approach it, consciously or unconsciously.[3]

In this perspective, the period when a science is unfolding is called pre-paradigmatic period. At that moment, the subjects are still relatively flexible and its practices are not properly defined. The time when the discipline has its study object established in a stable way and its techniques, in a relatively clear manner, is called paradigmatic period. There is also the post-paradigmatic period, when occurs the exhaustion of the paradigm, when the discipline starts to respond promptly to all questions that arise.[3]

Thus, for a theory to be accepted as a paradigm, this needs to be better than those that compete with it, although there is no need to explain all the events that are likely to be confrontational objects. It is noteworthy that one or more paradigms determine the so-called normal science, understood as a firmly based research in one or more scientific achievements that have occurred in the past that provide the foundation for its practice.[4]

Moreover, the normal science is not concerned with findings of capital importance, but only with conducting researches that contribute to the increase and accuracy of pre-established paradigm, so that their failure will fall on the scientist and not on it[4]. There is no absolute truth and, in science, the truth is always a maybe, and there no methods that prove it true, but only false.[2]

During its path, normal science may, at any time, experience a crisis by the presence of an anomaly that will make the pre-established paradigm fragile. Thereby, there may arise a new candidate for paradigm, which may result in a great battle for acceptance, a movement called scientific revolution, necessary for the progress of science.[2,4]

♦ The process of scientification of Nursing

In antiquity, nursing developed based on empiricism, since women who possessed a common sense knowledge cared for their sick relatives or became deaconesses as a form of resistance to paternal power, caring for others.[5]

With the ascendancy of the clergy and the church on society in the early centuries of the Middle Age, the work of nursing began to be seen as a penitential exercise for purification and atonement for sins, also exercised by noblewomen who sought the church as an opportunity to continue intellectual nature studies or other personal interests.[5]

In the Renaissance period (XV century), the Nursing was seen only as a religious art and, in the period of the Protestant Reformation (sixteenth century), laypeople were contracted to do the work of nursing in hospitals with infinitesimal compensation and poor conditions.[5]

From the XIX century, empiricism in nursing begins to be replaced by scientific knowledge when girls from good family, coming from the field, began to be trained based on the medical knowledge to perform the practice, whereas Sisters of Charity cared for the sick after receiving, from physicians, clinical, theoretical and practical nursing knowledge, besides pharmacology knowledge.[5]

In the second half of the XIX century, in England, there is the figure of Florence Nighthingale, a nurse who had acquired an almost holy reputation for caring and restoring health of wounded soldiers or patients who were participating in the Crimean War. She realized, through her astute sense of observation, that many of them were dying because they were living in unhealthy environmental conditions[6] and, from that experience, she wrote two capital works entitled "Notes on Hospitals" and "Nursing Notes", in 1858 and 1859, respectively. She later deployed, in London, the Training School for Nurses, attached to St Thomas' Hospital in 1860.[7]

In this school, through theoretical and practical teaching of nursing, women were trained to care by using environmental resources in the perspective that nature could act on the sick person[1], emerging figures of lady-nurses and nurses, the first ones were prepared to perform the supervisory work and education, and the second, to provide direct care to patients, which contributed to the diffusion of knowledge built by Florence Nightingale, spreading them even to other countries such as Canada, USA, Europe, among others.[8]

Designed from Nightingalean principles, modern nursing emerges revealing a new way to care for and explaining it from an embodied, organized and logical thought, expanding worldwide as practice and teaching[7], which points to the beginning of its process of scientification. During the almost one hundred years that followed, no new knowledge beyond the writings of Florence Nighthingale was produced in nursing[9,10]. However, with the advent of the XX century, more specifically from the year 1950, the nurses begin to be more interested in building a body of knowledge specific to nursing, so that their practice could be better substantiated and, with it, the nursing could develop and consolidate as a profession.[1,9]

Thus, in 1952, the Nursing theory called Theory of Interpersonal Relationship[11] is published, which paved the way for the construction of several other theories in the field of epistemological knowledge of nursing, which greatly contributed to its recognition as a scientific discipline.

It is noteworthy that the 1970s had the greatest number of publications of nursing theories and the 1980s, the highest number of revised and expanded theories[9], with the proviso that the first Brazilian Nursing theory was created in the 1970s, by the nurse Wanda de Aguiar Horta, entitled Theory of Basic Human Needs.[10]

Still on the theories of Nursing, all of them arose from the use of a scientific method, the observation, whereby the theoretical organize their vision and describe the "thing" observed using a number of notions they had, without which they could not do it[3]. Based on that, they build their assumptions, concepts and proposals, giving a body to them, which, only after validation, are published and used in professional practice[9]. Therefore, these writings are a scientific construction, thus, science produced by the science of nursing.

It is noteworthy that the theories were built in order to guide and improve the practice of nursing by its use by professionals and are intended to describe, explain, predict or prescribe the phenomenon, understood as the nursing care[9], epistemological object and core content of the course to develop strong influence on research, education and philosophy of Nursing.[12]

Therefore, although care is also a subject of study of various other disciplines, nursing has been increasingly represented as a science when studying it in its various dimensions, so as it can be considered as the great paradigm of the discipline, calling it as science.

♦ Critical thinking and the Nursing science

The thought is any mental activity with or without specific objectives and develops from experience with the external world[13], being the sensations and perceptions recognized as the main units for the construction of knowledge about this world.[14]

In a philosophical view, what is not considered problem is not the object of reflection, so we think when things are not going well or when something bothers us. Thus, every kind of thinking starts from the existence of a problem and who cannot clearly understand and formulate a problem, does not do science.[2]

In the execution of his daily actions, the man uses tools that enable the realization of his work, here understood as doing science, creating the human design of representation of reality, namely consciousness. This has the language as a constitutive element, without which thought could not be expressed.[14]

From gestures to articulate sound language, the language is established as a social instrument of communication between individuals, characterizing the development of thought in appropriation motion of concepts, such as the material and ideal. The material is something sensuously perceptible and ideal represents the material in thought symbolic systems, assuming the peculiarity of resulting from man's action to analyze and interpret the real[14], which, from the perspective of science, is nothing more than the world structured by the way that the scientist sees and organizes it, the reason for the object to be considered a phenomenon.[3]

Still regarding language, there are two types that we can use to talk about the world called restricted code and elaborated code. The first type is useful in practice, it does not have a deepening of thought and is characterized by the fact that the people who use it share the same ideas presented by the person expressing it. The elaborate language matches the type of discourse produced in

order to overcome the restricted language; it portrays the purpose and the meaning of the message, in addition to no need for the involved subjects to share the same basic assumptions. This is a critical and philosophical language, which aims at liberation and the possibility of a new look at the observed object.[3]

For performing their work, nurses need to think critically and reflectively, which will lead to praxis, process originated from the awareness of the role they should play along with the patient in planning the care[15], which will contribute to more easily identify and recognize the human needs and develop comprehensive, ethical, humane and valuable actions.[16]

It is noteworthy that critical thinking differs from everyday thinking and bases on the scientific principles and method[17], being an essential element of professional responsibility and quality of care provided by the nurse[18]. It is also important to teaching and research, in view of the formation of "thinkers with skills necessary for the exercise of a humanistic profession".[19]

For the critical thinking, it is necessary for nurses to develop attitudes and critical thinker features such as self-discipline, responsibility, prudence, curiosity, insight, intuition, creativity, practicality, empathy, flexibility, persistence, courage, patience, being reflective and proactive, among others, as well as the development of skills and interpersonal abilities and techniques[17], which are necessary when conducting researches in the area.

Three components build this kind of thinking: knowledge, skills or abilities and attitudes of critical[20]. Thus, in a dialectical perspective, while scientific knowledge is necessary for the development of critical thinking, it requires critical thinking in order to be built, for it is believed that the scientification of nursing was given and is given by the use of this way of thinking by nursing researchers.

This leads to the reflection that Florence Nightingale was the first great critical thinker of nursing history, because, at a time of predominance of the miasmatic model centered on belief that the disease was caused by contagion and lack of hygiene, she managed to deploy multiple precursor practices of the future, in addition to building the first knowledge specific for the profession. With this way of thinking, she used her keen powers of observation, coupled with an ability to gather information and observed data, taking foregone conclusions for the time when she lived.[6]

In this perspective, the awakening of the importance of the development of critical thinking has to take place since the beginning of nursing education, so that graduate students can begin to adopt more critical, creative and transformative attitudes. Therefore, professors need to know and use strategies that lead the students to acquire the necessary skills to think critically, so that they can expand their cognitive processes and expressive knowledge of Nursing as profession[21], as well as to submit a head completely made instead of a completely full head[22] that enable not only organizing, but (re)constructing knowledge.

FINAL THOUGHTS

Building this essay allowed the authors further clarification on the issues science, nursing and critical thinking in a philosophical perspective. Concerning science, it enabled them to understand it as a historical phenomenon, built from a given context and by different interests in order to create solutions to the problems observed and, therefore, determined by social demands and the way groups or people respond to them. It also enabled them to reflect on the truth of science and the concept of paradigm, from which the so-called normal science establishes.

The study intends to show that, just as knowledge, throughout its history, nursing also experienced major changes until its scientific recognition and, although there is still doubt whether it is actually a science, this question is not present in this essay, even because care is its great paradigm, which offers an objectivity that allows it to be understood as such.

Throughout history, in line with the care, several theories were created, built from a scientific method, observation, which are used in practice to guide the actions of nurses, increasingly contributing for the nursing to establish as a science, which appears to be at the paradigmatic phase, as its object, care, is already built relatively stable, as well as its techniques have also very in a very clear way.

Moreover, the pre-paradigm period experienced by this discipline seems to have begun from Florence Nightingale, who, with her keen sense of observation, conducted researches that led to the first scientific writings involving care in nursing, which

guided the actions of nurses of that time for many years.

As for critical thinking, this study enabled understanding it as very important for the scientification of nursing. Considering that science cannot be done without a problem and that its presence instigates people to think, the conclusion is that the more critical the thought, the more scientific is the answer to this problem and the more elaborate is the used speech. The speech will be more critical, more liberating, more explanatory, reason why thinking critically should be a practice encouraged by professors since the training of nurses, future nursing scientists.

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