







TRUTH, KNOWLEDGE, JUSTIFICATION, AND DENIALISM: IMPLICATIONS FOR NURSING SCIENCE
VERDADE, CONHECIMENTO, JUSTIFICAÇÃO E NEGACIONISMO: IMPLICAÇÕES PARA A CIÊNCIA DA ENFERMAGEM
VERDAD, CONOCIMIENTO, JUSTIFICACIÓN Y NEGACIONISMO: IMPLICACIONES PARA LA CIENCIA DE ENFERMERÍA

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ABSTRACT

Objective: to show the epistemic reflections about the truth, knowledge, justification, and denial in the development of scientific knowledge for Nursing Science. **Method:** this is a reflective study of a theoretical-philosophical nature. **Results:** research in Nursing is recent, being observed from the second half of the twentieth century. Five aspects are indicated for the analysis: a) the truth and some of its philosophical aspects; b) scientific knowledge and its epistemic uniqueness; c) the traditional tripartite analysis of knowledge and some of its problems; d) the contemporary difficulties regarding scientific knowledge - denialism; e) synthesis for the Science of Nursing. **Conclusion:** researchers need to be solid before the epistemological foundations so that they can guarantee the coherence and consistency of the scientific knowledge produced. The researcher in the Nursing area must be aware of all the epistemic intricacies that surround the production of scientific knowledge, as its validity depends on this. It is recognized that the denial attitude is harmful to Western culture, as it is based on the refusal and contempt for logos as an element for the promotion of human life.

Keywords: Nursing; Knowledge; Science; Research Personnel; Philosophy.

RESUMO

Objetivo: apresentar reflexões epistêmicas acerca da verdade, do conhecimento, da justificação e do negacionismo na elaboração do conhecimento científico para a Ciência da Enfermagem. **Método:** trata-se de estudo reflexivo de natureza teórico-filosófica. **Resultados:** a pesquisa na Enfermagem é recente, sendo observada a partir da segunda metade do século XX. Indicam-se cinco aspectos para a análise, a saber: a) a verdade e alguns de seus aspectos filosóficos; b) o conhecimento científico e sua singularidade epistêmica; c) a análise tradicional tripartite do conhecimento e alguns de seus problemas; d) as dificuldades contemporâneas sobre o conhecimento científico - o negacionismo; e) uma síntese para a Ciência da Enfermagem. **Conclusão:** é necessário que os pesquisadores tenham solidez ante os fundamentos epistemológicos para que possam garantir a coerência e a consistência do conhecimento científico produzido. O pesquisador da área da Enfermagem deve estar cômico de todos os meandros epistêmicos que cercam a produção do conhecimento científico, pois disso depende a sua validade. Reconhece-se que a atitude negacionista é danosa à cultura ocidental, pois se funda na recusa e no desprezo ao lógos como elemento de promoção da vida humana.

Palavras-chave: Enfermagem; Conhecimento; Ciência; Pesquisadores; Filosofia.

RESUMEN

Objetivo: presentar reflexiones epistémicas sobre la verdad, el conocimiento, la justificación y la negación en el desarrollo del conocimiento científico para la Ciencia de la Enfermería. **Método:** se trata de un estudio reflexivo de carácter teórico-filosófico. **Resultados:** la investigación en Enfermería es reciente, observándose desde la segunda mitad del siglo XX. Se señalan cinco aspectos para el análisis, a saber: a) la verdad y algunos de sus aspectos filosóficos; b) el conocimiento científico y su singularidad epistémica; c) el análisis tradicional tripartito del conocimiento y algunos de sus problemas; d) las dificultades contemporáneas en relación con el conocimiento científico - negacionismo; e) una síntesis para la ciencia de la enfermería. **Conclusión:** es necesario que los investigadores sean sólidos ante los fundamentos epistemológicos para que puedan garantizar la coherencia y consistencia del conocimiento científico producido. El investigador en el campo de la enfermería debe ser consciente de todos los entresijos epistémicos que envuelven la producción de conocimiento científico, pues de ello depende su validez. Se reconoce que la actitud de negación es perjudicial para la cultura occidental, ya que se basa en el rechazo y desprecio del logos como elemento de promoción de la vida humana.

Palabras clave: Enfermería; Conocimiento; Ciencia; Investigadores; Filosofía.

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INTRODUCTION

Nursing research emerged in the second half of the 20th century with the training of researchers at the doctoral level, who began to define its metaparadigm and investigation methods. Therefore, as a young science, researchers in the area need to appropriate the epistemological foundations about truth, knowledge, justification, and denialism for clarity, coherence, and consistency of the scientific knowledge of the profession.¹⁻³

Through science, the search for truth has been established in the course of Western history and this has been manifested by scientific knowledge, which has a provisional character. This characteristic is the guarantee that one walks in the direction of solving doubts and establishing coherent and robust bases.²⁻⁴

Currently, we are witnessing a false debate about scientific knowledge: denialism. It uses several strategies to move public opinion to take an opposite position to scientific conclusions and hides its real political and economic interests. Among the strategies employed, there is the reintroduction of zombie arguments. These are raised from the rubble of debates overcome by science and dressed in a new guise, they are used to try to move public opinion to doubt, fear, and opposition to scientific conclusions.⁵⁻⁸

Therefore, researchers in general and Nursing researchers, in particular, need to be in a permanent reflective attitude to judge the production of scientific knowledge from the epistemological foundations regarding the truth, knowledge, justification, and uniqueness of the scientific method.¹

For these reasons, the study aims to present epistemic reflections on truth, knowledge, justification, and denialism in the development of scientific knowledge for Nursing Science.

METHOD

This is a reflective study of a theoretical-philosophical nature for which the terms scientific knowledge and knowledge are considered equivalent, despite having specificities, but not in opposition. To discuss truth, knowledge, justification, and denialism, we consulted the literature in the corpus of the Philosophy of Science and Epistemology, whose contents are presented and discussed in the following sections: a) the truth and some of its philosophical aspects; b)

scientific knowledge and its epistemic uniqueness; c) the traditional tripartite analysis of knowledge and some of its problems; d) the contemporary difficulties regarding scientific knowledge - denialism and, finally, a synthesis for the Nursing Science. The selection of texts was based on the academic debate experienced by the author, as a student, in the subject of the Postgraduate Program in Philosophy - in the Philosophy of Science, Logic, Mind and Language research.

DEVELOPMENT

The truth and some of its philosophical aspects

Three synthetic movements are carried out to understand the truth. The first is to recognize the debate between Aristotle and those present in Platonic texts. The second is the Copernican revolution and the problem of truth and, finally, the pragmatic problematic of truth.¹⁻⁶

Aristotle introduced a distinction between being as true and being itself, which comprises the multiplicity of meanings of being. Thus, “being” as true “being” consists of a connection of thought: true and false reside in the union and separation of attribute and subject, which can occur in proposition and judgment. However, despite this logical conception of truth, the philosopher brought in *Metaphysics* another conception, the ontological one, such possibility occurs in the obligatory existence of a connection in thought with the thing for it to be true. Knowledge was thought from the image of thought as a copy of the real (what came to be called the Correspondence Theory of Truth - CTT).¹⁻⁵

The stabilization in Western thought of CTT was done with Thomas Aquinas when he affirmed that the truth in the intellect is in its adequacy to the object. This articulation of the correspondence thesis with the realist principle emerges at the base of the notion of truth; if, on the one hand, the world makes knowledge true, on the other hand, knowledge makes the world true.³

The CTT was severely shaken by the critical revolution undertaken by Kant. He introduced an important change by elucidating the mind's contribution to the cognitive process. Thus, true knowledge was not the correspondence of the fact, that is, its copy; it certainly depends on the world, on what is in the world, but also on the constitution of the subject.^{1,3}

The Copernican revolution also brought the problem of truth. In this, it is convenient to highlight two Kantian movements for the elucidation of knowledge by the subject, sensitivity, and understanding. It is in the preface to the second edition of the Critique of Pure Reason that Kant, reflecting on the problem of truth, finds that what has been done is accepting that knowledge must be regulated by the object. For him, empirical knowledge is insufficient, because it cannot claim to be necessary and universal. From this diagnosis, the core hypothesis of the so-called Copernican revolution appears aimed at establishing the submission of the object to the subject. Thus, the authority to the given, in which necessity and universality can be found, leads to the *a priori* plane. In this way, if intuition depended on experience, access to that plane would be closed, unlike what happens if the object is regulated by intuition. The meaning of this characterization is important because, for Kant, the problem of truth is not posed in terms of knowing whether there is conformity of knowledge with the object, but in knowing whether there is a universal criterion for the truth of knowledge. Once the possibility of establishing a criterion of material truth has been ruled out, there remains the possibility of a criterion of formal truth, that is, one based on universal and necessary rules of understanding. Therefore, from the Kantian theory of objectivity, it will be possible to understand and evaluate the Kantian thematization of truth and see how it inaugurates justifications as a core epistemological perspective of the analysis of knowledge.²⁻⁴

For Charles Sanders Pierce (1839-1914), in the pragmatic problematic of truth, knowledge must be thought of in terms of investigation, and its objective is based on the establishment of beliefs. At the origin of this problem is doubt and with it, the struggle to reach belief begins. This ends when doubt ceases. Therefore, the only purpose of the investigation is to establish an opinion. When this is established, a robust belief is achieved and there is a tendency to quiet the discussion, regardless of whether the belief is true or false. Thus, belief is something that is believed to be secure and that soothes the irritability that doubt arouses. For him, several modes operate in synergism for the formation of belief: tenacity, authority, the *a priori*, and the scientific method. Tenacity is defined by the refusal to question one's ideas; authority consists of rejection, which can take various forms of opinions and beliefs that are at odds with the set of accepted beliefs; the *a priori* limits the acceptance of opinions according to certain principles of reason.¹⁻⁸

Scientific knowledge and its epistemic uniqueness

Knowledge is relational, that is, it presupposes two elements: the subject who knows and the object to be known. On the other hand, it is possible by the existence of what is offered to the subject able to know it. There is only knowledge for the knowing subject if there is a world to know, a world to which the subject belongs. As it is a relationship, knowledge is always relative, that is, it presupposes a point of view and the use of certain instruments, recognizing the limits of the subject who seeks to know.¹⁻⁵

Throughout history, many philosophers have given primacy to one of the poles of knowledge, sometimes to the subject, sometimes to the object, giving rise to two currents: idealism and realism. In the first, it goes from thought to things, in the second, the object is the starting point of the act of knowledge. Knowledge can be analyzed from other aspects as well. Starting from the object, knowledge can be concrete, when the subject establishes a relationship with an individual object. It can be abstract when it establishes a relationship with a general, universal object. It is accepted that the knowledge that keeps the aspect of truth takes place in the dialectical process, a movement that never ends and that goes on revealing the world in its richness and diversity. It can still be sensitive, being constituted by sensation and perception. Sensations present the qualities of objects; however, perceptions are more complex, as they elaborate synthesis of sensations.⁵⁻⁷

We know that scientific knowledge goes beyond the empirical, not only reaching the phenomena in their global manifestation, but also their causes, in their intimate constitution, and is characterized by the ability to analyze, explain, justify, theorize, induce laws, and reliably predict a similar event in the future. It is based on the scientific method and is subject to error and, consequently, to reformulation.³⁻⁹

Furthermore, the scientific method enables a permanent critique of statements through procedures that have proven to be reliable in obtaining elements of the judgment and in evaluating their evidential strength, on which the conclusions are based. Synthetically, it has three constituents: the problem, the hypothesis, and the experiment. The problem is the starting point for preparing a survey. It is a question that shows a situation in need of discussion, investigation, decision, or solution. The second element is the hypothesis. Through it, as an answer and provisional explanation, it relates the two or more variables of the raised problem, it must be testable and answer to the problem.

Finally, experimentation requires the interpretation of results, which always leads to conclusions that have the potential to lead to the discovery of new facts.³⁻⁸

Thus, it is like scientific knowledge to be subject to further criticism. In this way, the solution given to a problem, whatever it may be, can be subjected to further scrutiny. The development of science consists in the fact that scientific propositions suggest specific solutions to specific problems, always passing through the scrutiny of criticism.¹⁻⁴

Tripartite knowledge analysis and some of its problems

Scientific knowledge is taken to be justified true belief. Thus, there are three components to the traditional analysis of knowledge: truth, belief, and justification. They are necessary conditions for scientific knowledge, being called the tripartite formula of knowledge. When analyzed, it establishes that justified true belief is necessary and sufficient for knowledge. The tripartite analysis of knowledge: “S” knows “p” and if “p” is true; “S” believes in “p”; “S” is justified in believing “p”; that is, justified true belief.³⁻⁹

The truth as a necessary condition for knowledge has been pointed out. It turns out that most epistemologists find it extremely plausible that the false cannot be known. Thus, knowledge is not a factual verb. Its diagnosis is controversial, as the truth of something does not require someone to know or prove what the truth is. Truth is a metaphysical as opposed to an epistemological notion. It is a question of how things are and not how they can be shown. So, when it is said that only true things can be known, still nothing is said about how one can access the truth.^{3,5-12}

Belief is a necessary condition of knowledge is a somewhat more controversial condition than the condition of truth. The general idea behind the belief condition is that a person can only know what he believes. Not believing in something prevents you from knowing it; belief in the context of justified true belief theory means total or complete belief. To believe, it is not necessary to have very high confidence in “p”; it is closer to a commitment or a certainty. While it may seem obvious that knowing “p” requires believing “p”, some philosophers argue that knowledge without belief is indeed possible.⁴⁻⁵

Justification as a necessary condition of knowledge leads to the questioning of why this condition is necessary. The standard answer is to identify

knowledge with true belief, but a belief can be formed incorrectly. This does not necessarily mean that the subject must have engaged in a justification activity or tried to show that “p” is true. Rather, what the justification condition requires is mere that a belief that qualifies as knowledge has the property of being justified. Knowledge can have this property even if “S” does not engage in the activity of justifying its belief in “p”. Justification as a necessary condition of knowledge must be considered that a problem was pointed out by Bertrand Russell and Edmund Gettier. The first, based on the story of the broken clock in a railway station, is an example of a true belief that was not sustained as knowledge. In his story, the observer who came across the fact – the broken clock – was wrong in his conclusions, despite being in the right place and seeing other features of the environment. The second, from a counterexample, demonstrated that there are true and justified beliefs that satisfy the tripartite definition of justified true belief, but it does not seem to be an authentic case of knowledge.³⁻¹¹

Contemporary difficulties on scientific knowledge: Denialism

Denialism is a rhetorical and irrational argument that aims to confer an apparent legitimacy to the debate on scientific issues that are no longer under discussion by science, as they are already pacified by consensus. Thus, the deniers seek, with “airs” of critics, to question a theme already pacified by the scientific community, moving public opinion to fear and paranoia.⁵⁻⁷

We live in an age when all kinds of scientific knowledge face organized and irrational opposition. Deniers, empowered by their sources of information and research interpretations, doubt the scientific consensus. In a sense, all of this is not surprising. The influence of science and technology on social life holds a mixture of comfort, rewards, but also fear as it is not possible to analyze all the impacts on life in its multiple aspects. This is one of the elements on which the deniers focus to bring their point of view and in which they cover up their real motivations of a political and economic nature. Arguably, deniers exploit fear and panic. They act irrationally, as they abdicate scientific evidence.^{4,6,8}

Going forward, a recent study showed that students with advanced science education had an obstacle in their intellectual journey when asked to affirm

or deny that the Earth revolves around the sun; this truth is counterintuitive. Research indicates that as a person becomes scientifically literate, naive beliefs are repressed, but not eliminated. They hide in the mind and move the individual to give a non-rational meaning to the world. We act relying on personal experiences instead of considering the occurrence of phenomena through statistical or hermeneutic analyses, especially in qualitative studies. Less attention is paid to the evidence, meticulously compiled through various studies. For example, recent scientific studies reveal that antiprostatic antigen (PSA) testing with high laboratory value is not synonymous with cancer. However, the fact that two events have some degree of connection (both are derived from the prostate, whether it is the PSA of a healthy gland or the PSA produced by prostate adenocarcinoma - this does not mean that there is a causal relationship) does not mean that they do not be random.^{1,9-12}

In human psychology, there is a difficulty in accepting randomness, as nature has provided human beings with the dynamics of the pattern to obtain meaning. This is useful in the course of history. However, science warns that there is not always a causal connection. For such a connection to be established, it is necessary to carry out statistical analysis, showing the association between the events. The scientific method can be used improperly, making the results of studies vulnerable, through what is called bias.¹⁻⁸

For a synthesis for the Nursing Science

Researchers in the Nursing area moves with the credulity of reaching the truth, even though, in a Popperian sense, verisimilitude. Therefore, through the subject (S) and object (O) relationship, they are faced with the care pragmatics with the phenomenal world, seeking, through the scientific method, to obtain its unveiling. The CTT does not prove to be more effective, since the Kantian criticisms were demolishing this perspective. Thus, in the relationship “S” - “O”, it is “S” who mediates with “O” the “elements” that it seeks to identify, through the scientific method, ratifying or rectifying its hypothesis. This aspect is fundamental for the construction of scientific knowledge by researchers in the area as it necessarily implies that rigorous instruments (statistical analysis or hermeneutics) must be used to reach a reliable and valid conclusion.^{1-8,10-12}

Once the conclusion of the research is settled and the study hypothesis is ratified, this does not mean that the truth is revealed, but that the unveiled part of “O”, within the perspective of “S”, was evidenced. In this sense, the scientific knowledge obtained proves to be promising, as it is in its nature to submit to peer criticism, aiming to attest to its consistency and coherence so that, through scientific consensus, a scientific premise can be established. This process is laborious and implies dedication, commitment, and permanent critical thinking by researchers in the Nursing area. We know that it is human nature, according to Hume, to have passions and to be affected by them. In this case, the reason may incur epistemic errors, hence the urgent need for peer review of scientific discoveries, whether through the evaluation by an academic committee composed of internal and external members of the Graduate Program or through the review of the texts submitted for consideration for dissemination in periodicals.^{1-3,5,8}

Finally, knowledge is a justified true belief, the criticisms made to this formula, even today did not obtain a counterpoint that could pacify the raised question. However, one element highlighted by Pierce remains unchanged: belief. But what is its foundation? When it comes to Nursing Science, scientific evidence.^{1-3,5,8-12}

CONCLUSION

The epistemic questions of truth, knowledge, justification, and denialism are current and relevant, but the solution to the existing conflict is not simple. The researcher in the Nursing area must be aware of all the epistemic intricacies that surround the production of scientific knowledge, as its validity depends on this. We highlight that the scientific method is instrumental in the search for the truth. Regarding scientific knowledge, the famous definition of being a justified true belief, despite the criticisms suffered, is still in force. A prominent role assumes the belief for the formation of scientific knowledge, as only what is attributed to the value of credulity is known. In this sense, the forming element of belief is the scientific evidence that reveals itself to the subject of knowledge, in its relational encounter with the object, mediated by the scientific method. For Nursing Science, this aspect is relevant, as metaphysical assumptions should not be considered in the production of knowledge, as this is part of the observation of the phenomenon present in the real world.

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