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Opinion

The International Classification of Headache Disorders from the point of view of Thomas Kuhn: a reflection

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Abstract

Headaches are characterized by a sensation of discomfort or pain in the cephalic region. Due to the large number of types and subtypes of headaches, the standardization of their approach is necessary through the International Classification of Headache Disorders (ICHD), a document that is currently in its 3rd edition (ICHD-3). The evolution of the ICHD follows the hypothetical-deductive model of science based on Karl Popper's philosophy, which has a strong presence in the health sciences. The classification of headaches has evolved over time, incorporating and removing criteria, reflecting the need to adapt the classification to constantly evolving scientific and clinical demands. However, some changes can generate discrepancies between clinical practice and the elaborated diagnostic tools. In this context, this article reflects on whether it would be advantageous to return to old principles and foundations of obsolete classifications. The criterion of osmophobia, which is no longer in use in ICHD-3, is highlighted. This reflection can be developed following Thomas Kuhn's (1922-1996) view on science. In his main work, "The Structure of Scientific Revolutions" (1962), Kuhn proposes a three-stage model for science: the adoption of a paradigm, normal science, and a period of crisis. Kuhn also proposes the principle of incommensurability to understand the limitations and complexities of science. The application of this principle allows headache specialists to recognize that different approaches to headache classification have their own limitations and complexities, encouraging them to consider a variety of perspectives, paradigms, and theories in approaching clinical cases and conducting scientific studies. An integrative approach that combines Popper's hypothetical-deductive model with Kuhn's principle of incommensurability allows headache specialists to have a broader and more critical understanding of headache classifications.

Keywords:
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Headaches are characterized by a sensation of discomfort or pain in the head, including the upper region of the neck, face, and/or inside the head. Despite generally being conditions with good resolution, the nature of headaches, combined with the intensity and frequency of episodes, can lead to functional disability.[1]

Due to the large number of headache types and subtypes (over 150), it is necessary to standardize their approach through the International Classification of Headache Disorders (ICHD), which is currently in its 3rd edition (ICHD-3).[2]

It is a hierarchical classification system in which all types of headaches are separated into major groups, which can be further subdivided into headache types, subtypes, and subforms. The ICHD is an excellent tool for clinical practice, as prior to its development the diagnosis and classification of headaches were particularly difficult and confusing due to the lack of systematization and the inherent complexity of the condition.[2]

The International Classification of Headache Disorders (ICHD) is a technical manual initially based on expert opinions, with the gradual introduction of clinical studies, allowing for the revision of the classification through the falsifiability of its diagnostic criteria and their adequacy. Thus, the evolution of the ICHD follows the hypothetico-deductive model of science, based on the philosophy of Karl Popper and highly present in the health sciences.[3,4]

In order to facilitate the diagnosis and treatment of headaches, the ICHD has been systematically standardized over the course of 30 years. However, as Jes Olesen, chairman of the ICHD committee, highlights, the classification must, in principle, be a conservative discipline. When significant changes occur in the classification, it is necessary to review all studies that used the modified parts of the classification.[2]

Analyzing the ICHD-3 from this perspective, it is possible to observe that the classification of headaches has evolved over time, incorporating new criteria and removing others. These modifications reflect the need to adapt the classification to the constantly changing scientific and clinical demands. However, some changes may generate discrepancies between clinical practice and the developed diagnostic tools.

An interesting reflection in this context is whether it would be advantageous to revisit old principles and foundations of obsolete classifications to complement therapy. This reflection can be applied considering Thomas Kuhn's (1922-1996) view on science.

In his major work, "The Structure of Scientific Revolutions" (1962)[5], Kuhn proposes a three-stage model for science: the adoption of a paradigm, normal science, and a period of crisis.

In the initial stage, the scientific community adopts a paradigm, which represents the set of methods, rules, and theories in vogue for a particular group or scientific community, serving as the basis for research and scientific development. During the phase of normal science, scientists work within the limits and assumptions established by the paradigm, conducting research, solving problems, and expanding knowledge within that theoretical framework.[5]

However, at some point, anomalous events may arise that challenge the established paradigm. These anomalies can be evidence or phenomena that cannot be explained or incorporated into the existing conceptual framework. This leads to a period of crisis when the existing paradigm is questioned, and the search for alternatives begins.[5]

In the study of headaches, ICHD-3 can be considered an example of a scientific paradigm. It provides a hierarchical structure for classifying the different types and subtypes of headaches, offering clear guidelines for the diagnosis of headaches. However, like any scientific paradigm, the ICHD-3 may also have its limitations. As new research is conducted and more information is obtained about headaches, anomalies or evidence may arise that challenge the established diagnostic criteria. This can lead to crises in the existing paradigm and the need for revision or update of the classification.

When evaluating scientific progress and the evolution of headache classification from Kuhn's perspective, it is important to recognize that the knowledge generated by normal science prior to the current paradigm should not be completely disregarded. The diagnostic criteria removed in the ICHD-3, such as the use of osmophobia for diagnosing migraines, may have been useful and clinically relevant at a certain point, even if currently there is not enough scientific evidence to support them.

In the study of headaches, ICHD-3 can be considered an example of a scientific paradigm in the field of headaches. It provides a hierarchical structure for classifying the different types and subtypes of headaches, offering clear guidelines for the diagnosis of headaches. However,

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Thus, the application of the principle of incommensurability allows headache specialists to recognize that different approaches to headache classification have their own limitations and complexities. This encourages them to consider a variety of perspectives, paradigms, and theories in the approach to clinical cases and the conduct of scientific studies.

Therefore, by combining Popper's hypothetico-deductive model with Kuhn's principle of incommensurability, based on theoretical knowledge of both philosophies, headache specialists can develop a more comprehensive and critical understanding of headache classifications, taking into account both the logical structure and testability of hypotheses, as well as the contextualization and inherent limitations of each paradigm.

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