



Texto & Contexto - Enfermagem

ISSN: 0104-0707

ISSN: 1980-265X

Universidade Federal de Santa Catarina, Programa de Pós Graduação em Enfermagem

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Texto & Contexto - Enfermagem, vol. 28, e20180264, 2019
Universidade Federal de Santa Catarina, Programa de Pós Graduação em Enfermagem

DOI: <https://doi.org/10.1590/1980-265X-TCE-2018-0264>

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FOR A CRITIQUE OF THE H-INDEX IN THE AREA OF NURSING, IN THE LIGHT OF THOMAS KUHN

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ABSTRACT

Objective: to discuss the use of the H-index as an indicator for the evaluation of the Nursing area researcher in the light of Thomas Kuhn's disciplinary matrix.

Method: this is a reflective study, conducted between March and April 2018, which identifies the elements that underlie the H-index and criticizes it as an indicator for the evaluation of the researcher in the nursing scientific community.

Results: the Nursing area is in the normal science phase and has a disciplinary matrix. It consists of theories, research methods and experiments; establishes procedures; indicates the problems to be studied and determines the scientific agenda; provides modular solutions for the scientific community; it has epistemic values that legitimize and justify the research practice. The values are of a quantitative and qualitative nature, namely: accuracy, consistency, range, simplicity, objectivity, originality and fruitfulness. The H-index cannot display the qualitative values of science.

Conclusion: the quantitative and qualitative epistemic values form an amalgam, making it impossible to separate them, for it is in axiological complementarity that science is founded. From its evaluative approach with the so-called mature sciences, it is inferred that the Nursing area should consider these values for itself. The H-index is limited for the evaluation of the researcher. Care should be taken to harbor it, so as not to hinder the insertion of new candidates to be researchers into the postgraduate teaching staff, thus preventing generational sharing among peers, given that the index does not can measure the category made up by young researchers.

DESCRIPTORS: Philosophy. Nursing. Knowledge. Bibliometric indicators. Research policy evaluation. Researchers. Indicators of scientific production.

HOW CITED: Guimarães GL. For a critique of the h-index in the area of nursing, in the light of Thomas Kuhn. Texto Contexto Enferm [Internet]. 2019 [cited YEAR MONTH DAY]; 28:e20180264. Available from <http://dx.doi.org/10.1590/1980-265X-TCE-2018-0264>

POR UMA CRÍTICA DO ÍNDICE-H PELA ÁREA DA ENFERMAGEM À LUZ DE THOMAS KUHN

RESUMO

Objetivo: discutir o uso do índice-H como indicador para avaliação do pesquisador da área da Enfermagem à luz da matriz disciplinar de Thomas Kuhn.

Método: trata-se de um estudo reflexivo, realizado entre março e abril de 2018, no qual se identificam os elementos que fundamentam o índice-H e procede a sua crítica como indicador para avaliação do pesquisador na comunidade científica da Enfermagem.

Resultados: a área da Enfermagem está na fase da ciência normal e tem uma matriz disciplinar. Ela é constituída por teorias, métodos de pesquisa e experimentos; estabelece formas de procedimentos; indica os problemas a serem estudados e determina a agenda científica; fornece soluções modelares para a comunidade científica; possui valores epistêmicos que legitimam e justificam a prática de pesquisa. Os valores são de natureza quantitativa e qualitativa, a saber: exatidão, consistência, alcance, simplicidade, objetividade, originalidade e fecundidade. O índice-H não consegue apresentar os valores qualitativos da ciência.

Conclusão: os valores epistêmicos quantitativos e qualitativos formam um amálgama, tornando-se impossível separá-los, pois é na complementaridade axiológica que a ciência está fundada. Por sua aproximação avaliativa com as ciências ditas maduras, infere-se que a área da Enfermagem deve considerar para si esses valores. O índice-H mostra-se limitado para avaliação do pesquisador. Deve-se ter cautela em acolhê-lo, a fim de não obstaculizar a inserção de novos candidatos a pesquisadores ao quadro docente do programa de pós-graduação, impedindo, assim, o compartilhamento geracional entre os pares, tendo em vista que o índice não consegue medir a categoria formada por pesquisadores jovens.

DESCRITORES: Filosofia. Enfermagem. Conhecimento. Indicadores bibliométricos. Avaliação de políticas de pesquisa. Pesquisadores. Indicadores de produção científica.

PARA ELABORAR UNA CRÍTICA DEL ÍNDICE H EN EL ÁREA DE LA ENFERMERÍA, SEGÚN THOMAS KUHN

RESUMEN

Objetivo: analizar el uso del índice H como indicador para evaluar al investigador del área de Enfermería a la luz de la matriz disciplinaria de Thomas Kuhn.

Método: se trata de un estudio de reflexión, realizado entre marzo y abril de 2018, en el cual se identifican los elementos que fundamental el índice H y se procede a someterlo a una crítica como indicador para evaluar al investigador en la comunidad científica de la Enfermería.

Resultados: el área de la Enfermería está en la fase de la ciencia normal y tiene una matriz disciplinaria. Está constituida por teorías, métodos de investigación y experimentos; establece formas de procedimientos; indica los problemas que deben estudiarse y determina la agenda científica; proporciona soluciones modulares para la comunidad científica; y posee valores epistémicos que legitiman y justifican la práctica de la investigación. Los valores son de naturaleza cuantitativa y cualitativa, a saber: exactitud, consistencia, alcance, simplicidad, objetividad, originalidad y provecho. El índice H no logra presentar los valores cualitativos de la ciencia.

Conclusión: los valores epistémicos cuantitativos y cualitativos forman una amalgama, lo que hace que resulte imposible separarlos, puesto que la ciencia está fundada en la complementariedad axiológica. Por su aproximación evaluativa con las ciencias llamadas maduras, se infiere que el área de Enfermería debe considerar esos valores para sí. El índice H se presenta limitaciones para evaluar al investigador. Se debe actuar con cautela al elegirlo, a fin de no obstaculizar la inserción de nuevos postulantes a investigadores al cuadro docente del programa de post-grado, impidiendo así la combinación generacional entre los pares, teniendo en cuenta que el índice no logra medir la categoría conformada por los investigadores jóvenes.

DESCRIPTORES: Filosofía. Enfermería. Conocimiento. Indicadores bibliométricos. Evaluación de políticas de investigación. Investigadores. Indicadores de producción científica.

INTRODUCTION

The Nursing area is a scientific and social practice. As a scientific practice, it has the main scenario in which the research develops in the *strictu sensu* postgraduate program of Nursing (PPGENf). The career, in the past, has already established the three major areas in which the various study proposals are inserted, namely: professional, health care and organizational. Through them, the eleven lines of research that found the investigative field of the profession may be grouped.¹

Undoubtedly, the studies developed in the various lines of research undertaken by the PPGENfs allow the Nursing area to be perceived in society by its competence in nursing care to human health in its multiple dimensions, both in the promotion of healthy living, and before life-threatening and life-threatening conditions, or chronicity, comprising the life cycle from the unborn to death. There are also works on topics that care-giving, notably those that address questions about the area's philosophy and epistemology.²⁻⁴

Due to its epistemological approach with the field of so-called mature sciences, such as physics and biology, the Nursing area evaluates its constructs and researchers, having their model in these sciences, albeit for adaptation. In mature sciences, the researcher is evaluated based on quantifiable variables that express the mastery of the rationality of these sciences, measured from their intellectual production, and the respective consumption by that scientific community, manifested through the citations received, besides the ability to generate technologies, innovations and technical improvements, among others. Thus, having this motto, the Nursing area proposes, based on peer evaluation, through the Higher Education Personnel Evaluation Commission (*Comissão de Avaliação de Pessoal do Ensino Superior*, CAPES), the various criteria to be employed for evaluating the PPGENFs and their researchers.^{2,5}

This consideration ratifies CAPES final report on the Nursing area in the last four years. It pointed out the general premises that should guide the organization of the PPGENf and the researcher's evaluation process, among the various considerations and recommendations. For this reflection, we highlight the rate of intellectual production obtained from the publication in journals with Qualis from stratum B1; ability to obtain research funding from a public or private funding agency; and its H-index assigned to the researcher from the *Web of Science* and *Scopus* bases. These three indicators demonstrate the area's effort to raise its assessment criteria to the standards set by the mature sciences.²

As a social practice, the Nursing area is immersed in a historical plot that has an ideological element that fosters a noticeably capitalist and positivist matrix. It is known that this ideological element has in its nature the characteristic of imposing itself on the researcher, moving him to the adhesion, producing the veiling of his conscience, without turning to the critical-reflexive analysis of the phenomenon in which the elaboration of scientific knowledge and the evaluation of the researcher take place.⁵⁻⁶

It is necessary to reflect on the intricacies that surround this whole process, aiming to identify its vicissitudes and limitations. From the point of view of the history of science, the effort undertaken by the area of Nursing is immersed in a debate marked by two currents, namely: internalism and externalism.⁷⁻⁹

In internalism, at its core, there is a conception in which science and scientists are perceived as something free of social influences, which consequently results in a positivist and idealistic interpretation of science. Thus, for the advocates of this current, it is researchers who have the ability to set the course and correctness on the practice of scientific research.⁷⁻⁹

The externalist approach is interested in the scientist's work and the transformation of science as part of a social group that shares elements that constitute a specific culture. This approach seeks to

avoid the emphasis on the researcher as subject without influence. From this perspective, the practice of research is not solely based on criteria of the logic of science. Social, political, economic contexts, among other external factors, are in this view as determining as the rational factors. Thus, the factors that are external to the researchers determine their way of acting and establish the research practice.⁷⁻⁹

These two perspectives intersect in the organizational and scientific field in the Nursing area. I believe, therefore, that it is extremely difficult to set up the boundaries between them. However, from the internal criticism performed by peers, it is possible to contemplate the elements that characterize the internalist perspective. Nursing area researchers, through an internal debate, elaborate the assumed discourse of self-correction and ratification of the research organization and practice. Thus, the own area attributes to itself the indicators capable of distinguishing the researches that establish the production of specific knowledge, innovation, epistemic criticism, improvement and correction of the scientific knowledge of the career from those that have scientific errors.^{5,9}

Thus, the Nursing area judges the relevance of studies developed in the career for its growth and development in care, teaching and research, thus ensuring to the human person health care based on the best scientific, humanistic and safe evidences. This is the scientific hue that underlies the discourse of the area and in it the internalist view present in the Philosophy of Science is contemplated.^{5,8-11}

The externalist perspective expresses itself from the political hue. In it, the Nursing area is founded on a capitalist society endowed with a strong ideological element and that has its own rules and objectives. It imposes on the area its vision of science, the world and the fulfillment of its propositions. Among its strategies is the use of economic power. It is through the official agencies/agencies promoting the research that its instrumentation occurs. Such a phenomenon runs through the history of science. Then, let us see. Since the rise of Modern Science in the seventeenth century, scientific research is a human activity that is extremely important and for its realization depends on the sum of public or private economic resources. Therefore, having the official agencies/funding agencies, among other tasks, the ability to finance studies and set the scientific agenda, the various areas will have to adjust to their claims. This deliberate action sets up the externalist influence on the Nursing area.^{2,5,9}

Therefore, to participate in a criterion of equality and relevance, with the so-called mature scientific areas, the Nursing area needs to make efforts to reach the same evaluative metrics and also to judge from the knowledge produced in the PPGEnf, technologies, innovations and improvements. All of these intricate processes aim to guarantee researchers access to financial resources for research development.¹⁻²

Therefore, it has become imperative for the Nursing area to evaluate the result of research undertaken by researchers from the scientific, economic and social point of view. This fact was undertaken by the mature sciences when they established the criteria for the evaluation of researchers and which, to a certain extent, allowed them to ensure greater access to funding. This logic was determinant for the ranking of researchers and institutions by the official bodies/promoting agencies of the research, giving prestige to those capable of producing state-of-the-art studies, ensuring the fruitful investment in the research. In this new scenario, the traditional assessment of nursing researchers is now deficient when compared to those employed by the mature sciences.^{2,9,12}

Several indicators have been proposed for assessing scientific activity by the mature sciences. Among these, the scientific literature stands out as a form of communication of studies undertaken by the researchers. It is argued that through it, it is possible to analyze the results and estimate productivity and quality of scientific work from its impact. In recent times, the H-index has been highlighted, which based on citations received seeks to analyze and compare the scientific activities of researchers individually.¹²⁻¹³

The justification and relevance of this essay is based on the premise that the H-index of the researcher's evaluation criterion is established, and it is urgent to reflect on what are the vicissitudes and limitations for the Nursing area.^{5,13}

Since the Nursing area is subjected to the same evaluation criteria as mature sciences, it is legitimate to use for its critique some theoretician that, coming from these sciences, seeks to reflect on the pragmatics of the research. Having this motto, Thomas Kuhn's work entitled "The Structure of Scientific Revolutions" is used to lay the groundwork for its critique and reflection.^{8,14}

Given such considerations, the objective of the study is to discuss using the H-index as an indicator for Nursing area researcher's evaluation in the light of Thomas Kuhn's disciplinary matrix.

RESULTS

The text is divided in two sections. In the first, the elements that underlie the H-index and its use by the scientific community are identified; then, one proceeds to the H-index critique, as an indicator for the Nursing area researcher's evaluation, based on Thomas Kuhn's disciplinary matrix.¹³⁻¹⁵

The H-index

The H-index was initially proposed by Jorge E. Hirsch in 2005, a professor at the University of California, San Diego, United States of America, to quantify the impact and individual performance of the Physics researcher based on scientific communication of their investigation. It has quickly gained prominence and has been used by other areas. Many understand it as a highly accurate tool, although it can establish the regularity of production and predict future scientific performance because it combines productivity and impact.¹²⁻¹³

It has become the benchmark of the researcher with outstanding performance and their main source for presentation in the scientific community. In the present time, the H-index surpassed its use beyond the individual performance, once that, by its intermediation, rankings are settled for universities, countries and scientific magazines.¹²

The H-index of a researcher is defined by the number of articles published, which obtain citations greater than or equal to this number. For example, when a researcher's H-index is said to be five, it means that he has at least five published articles, each of which has at least five citations. The greater the number of great interest articles published by the researcher, the greater is the number of citations reached and the higher their H-index will be. This will reflect the researcher's academic quality and productive capacity.¹²⁻¹³

About the use of citation in the scientific field, it is necessary to establish some considerations, aiming to elucidate points of obscurity. In the scientific field, it is a universal practice and reflects the processes of science development, as it recognizes the contributions of past and current researchers by peers, while signaling the theoretical environment in which studies were developed. It is through them that one scientific community connects with the others. Thus, by allowing the links between the various individuals of a given scientific community to be highlighted, the citation allows the index of activity, affinity, attraction, immediacy, openness and impact to be obtained.¹⁶

Thus, the H-index aims to characterize the accumulated scientific production of a researcher and presents some important characteristics, namely: a) it is a value that never decreases over the course of a researcher's trajectory; however, as the index value progresses, it requires the researcher's greatest productive effort; b) its increase is not linear, since the indicator is not totally influenced by the number of published papers, but is strongly associated with the number of citations; c) its value depends on the nature of the researcher's area.¹⁷⁻¹⁹

In this sense, it is an indicator that tends to value the scientific effort and preferable to other indicators traditionally employed to evaluate a researcher's scientific activity: total number of articles, total number of citations and average of citations per article. Using the H-index allows us to combine data from the researcher's trajectory, relating productivity and citation, using data easily accessible in scientific bases. Other vicissitudes identified are: it can easily be obtained by anyone with access to databases; it is easy to understand by peers; allows to characterize the scientific productivity of a researcher with objectivity; and it performs better than other isolated indicators for assessing a researcher's productive capacity.^{12-13,19}

The H-index has been perceived by the various scientific areas as the golden indicator for researchers' evaluation, arguing that it is based on a quantitative method that is valid for all scientific careers. However, it has been the target of criticism that points out to its limitation, highlighting the following: 1) it does not take into account the self-citation; 2) it disregards the characteristics of publications, given that it is not possible to standardize the scientific media employed and establish the power of interference in their final value; 3) the value of the index may be changed by incorrectly made citations - standardization in the compilation of authorship data is still an issue that may interfere with the citation process; 4) by presenting a simplistic form, the index discards the bibliographical detailing of the articles, such situation may impact in the future the analysis of the method itself; 5) young or younger researchers in the academic career have a reduced H-index.^{12,16-17,20}

Another criticism made is the problem in comparing different areas of knowledge. For this reason, using the H-index has been generating distrust in the scientific community, as it is known that there are major differences between the areas of knowledge, in which the forms of dissemination of the results of their research activities are weighed. Thus, citation rates vary widely across areas, resulting in a sharp index value in one career and a fledgling index in another.^{12,21}

As an instrument that aims to categorize a researcher's production by a single indicator, the H-index is far from complete. Along the way, some variants have been proposed to overcome the obstacles raised by their critics, highlighting the M-index, which allows to comparing the scientific career of different times. Another one is the E-index, which helps to estimate the citation of works not covered by the H-index, that is, citations of products published later than the one corresponding to the H-index.²⁰

The critique of the H-index for the evaluation of the Nursing area researcher from Thomas Kuhn's disciplinary matrix

For the theorist, a research area may go through different phases in its existence, summarized in pre-science, normal science, crisis and revolution. Arbitrarily, I think that the Nursing area is in the normal science phase, since it is possible to contemplate in it two Kuhnian elements, namely: 1) the research object proper and 2) a disciplinary matrix (researchers relate to each other, have common goals, investigated phenomena are similarly interpreted, sharing methods, instruments, epistemic values, concepts and theories). These situations are constitutive of normal science. The normal science phase is equivalent to the mature science phase.¹⁴⁻¹⁵

The challenge for the normal science practitioner is to work on solving 'puzzles'. These are specific problems that normal science deals with to solve. For them, this challenge constitutes an important part of the scientist's motivation for work, as it demands from the researcher inventive skill and resourcefulness in applying the techniques, concepts and methodological principles of the problem-solving paradigm.¹³⁻¹⁸

It is also noteworthy that the relationship between normal science and puzzle solving is consolidated by the scientists' commitment given the paradigm. Normal science does not aim at producing major novelties, whether conceptual or phenomenal. Matured science is notable for having

unquestionable clarity of the object of study, methodological principles, concepts and theories. Thus, the results of experiments carried out from the paradigm are always predictable. When the results do not match the expected, the problem is not attributed to the paradigm, but to the experiment or, more properly, to the researcher.¹⁴⁻¹⁵

Moreover, normal science arises when the dispute among the paradigms is over and thus the victory of one is established given the other opponents. At the heart of this victory is the ratification of the domination of the winning paradigm among the research group of one research area. There are different meanings of the use of the term 'paradigm', however, in the afterword to 'The Structure of Scientific Revolutions', the meaning of paradigm becomes that of a disciplinary matrix.¹⁴⁻¹⁵

In the philosopher's words: "[...] I suggest disciplinary matrix - disciplinary because it refers to a common possession to the practitioners of a particular discipline; matrix because it is composed of ordered elements of various species, each requiring detailed determination".^{14:289}

Thus, the disciplinary matrix consists of theories, research methods and experiments; establishes procedures; has a set of laws and methodological principles that guide its adherents; indicates the problems to be studied and determines the scientific agenda; provides modular solutions for a community of science practitioners and displays the epistemic values that legitimize and justify scientific practice.^{14,22}

It is forcible to admit that being in the normal science phase, the Nursing area has a disciplinary matrix. This is the visible mark of a science. For the theorist, a disciplinary matrix is also composed of epistemic values. He identified these values from Physics, namely: accuracy, consistency, range, simplicity, objectivity, originality, relevance and fecundity. Epistemic values may have quantitative and qualitative characteristics. Therefore, it is plausible to admit that in the Nursing area disciplinary matrix, having its epistemological approach in the mature sciences, notably Physics and Biology, they have epistemic values with these characteristics.^{14,23}

The theorist illustrates this consideration by saying that: "[...] the values contribute sufficiently to provide to the specialists in natural sciences a feeling to belong to a community [...] the values that the scientists adhere to most strongly are those that pertain to predictions [...]; however, there are values that should be used to judge [...] I am accused of glorifying the subjectivity and even the irrationality [...]"^{14:292-3}

For the philosopher, epistemic values are complementary to each other, forming the axiological amalgam of science. They give direction, justify and legitimize the practices and constructs of scientific research. It is through the scientific production of the Nursing area researcher that the epistemic values are identified. Thus, the instrument for evaluating the scientific production of the area researcher must be able to address the fullness of the axiological field of normal science.^{2,5,14,24}

As an evaluation instrument, the H-index, due to its objective-related characteristic, can only present the values that are expressed quantitatively, such as: (a) fertility - measured by the ability of the article to be cited by peers; (b) objectivity - measured by the citation number obtained from each article; and (c) simplicity-easy way to get the index on the part of the peers. It should be emphasized that, in order for a given evaluative indicator to be used in a broad and unambiguous way, it should take account of the full axiological field that establishes the normal science. Without being able to appreciate the qualitative values, in the light of Thomas Kuhn, the H-index has limitations of use.^{13,24}

With the evaluative use of the H-index of the scientific production of the researcher, all values of qualitative nature that fuse the epistemic axiological field of the nursing area remain untouched. These values are originality, range and consistency, since the H-index cannot present them. The qualitative epistemic values are subjectively evaluated, that is, they are identified by the knowledge subject from the understanding of the formal content of scientific production. This content by its nature is incapable of being perceived by a number, since knowledge is original, consistent, and of scientific

reach to the one who understands it. It will be the subject of knowledge who has the responsibility to value the content.^{9,13,24}

This consideration is illustrated by providing two examples to confirm the thesis that the isolated use of the H-index cannot evaluate the nursing researcher in the epistemic axiological field. The first is the result of the study developed by the University of Manchester in the United Kingdom. In it, a ranking was established with researchers from all areas with an H-index greater than 100. In the top 30, there are only four Nobel laureates and one winner of the top honor for young mathematicians, the *Fields* medal. Thus, several high H-index researchers were more successful in their ability to have their articles cited by peers in the scientific community to which they belonged than Nobel Prize-winning researchers. However, the winners of this award are evaluated against the following epistemic values: originality, fertility, solidarity, relevance, consistency, innovation and humanity. Such values not contemplated by the evaluation of researchers done exclusively by the H-index. To the date, there is no doubt in the scientific community that conferring the Nobel Prize on the researcher is recognition of their productive capacity and social commitment.¹²⁻¹⁴

The second example is from the History of Science. In 1905, the unique three-page article written by an attendant in a patent office revolutionized science. In it, Albert Einstein spelled out the equivalence of mass and energy. His academic life had been opaque, with constant shortages and indiscipline; however, with this publication he received the attention of scientists and earned posts at European universities. This historical fact reveals that only the subject of knowledge is able to recognize the originality, scope, and consistency of the formal content of scientific knowledge, that is, to understand it and to identify qualitative epistemic values. The H-index itself cannot evaluate these values. Therefore, it is argued that in light of the disciplinary matrix, despite the epistemic axiological field, the isolated use of the H-index as an indicator for nursing researcher's evaluation is not fully justified.^{9,12-14}

CONCLUSION

In conclusion, it can be said that the Nursing area is in the normal science phase, therefore, it has a research object and a disciplinary matrix. The matrix is epistemic axiological field of a science. Thomas Kuhn identified the following epistemic values: accuracy, consistency, range, simplicity, objectivity, originality and fruitfulness. From its evaluative approach with the so-called mature sciences, it is inferred that the Nursing area should consider these values for itself. They have a quantifiable and a qualitative nature constituting an amalgam that makes it impossible to separate them, for it is in axiological complementarity that science is founded. When analyzed within this epistemological perspective, the H-index is limited as an evaluative indicator of the nursing researcher, since it is restricted to identifying only quantifiable epistemic values.

It can also be seen that there is a historical and philosophical plot underlying the use of the H-index for the nursing researcher's evaluation. In this plot, two perspectives are contemplated that proclaim themselves the parents of the scientific enterprise and that seek to justify and legitimize the practice of research, namely: internalism and externalism. It is noteworthy that every intention of science is to move in search of the truth. The human being is not satisfied with the mistake, they aspire to know the truth. Thus, in internalism, researchers themselves justify, legitimize and evaluate their research activity and constructs; in externalism, it is the social, that is, political, external forces that determine the investigative practice and establish the scientific agenda and the research evaluation metrics, their constructs, among others. Such an undertaking comes from official bodies/funding agencies. These two perspectives are active in the Nursing area.

Thomas Kuhn points out that it is in the historical process of science, in the sharing of experiences among peers, that the continuity and development of the production of scientific knowledge is made

possible. It should not be different in the Nursing area, as it may impose harsh penalties on the area, including scientific stagnation. It is necessary to have the proper clarity that the maturing of the skills required for the practice of research and, consequently, for the production of knowledge does not occur with the obtaining of the Ph.D. academic degree. Forming a successful researcher requires time and years of quality, taking place in the course of an academic path, in communion with researchers with notorious expertise.

In recent times, in the history of postgraduate nursing, it has been possible to identify the emergence of several generations of new scientists who were led by retired researchers. It was in the interaction between the mature and neophyte generations that the postgraduate program was gradually established in homeland soil. In this social interaction, researchers with scientific maturity began to dedicate themselves to transmit the following generation their achievements, chimeras and limitations.

I think that the H-index may, paradoxically, strive for academic excellence to bridge the gap between generations of researchers and compromise in time the continuation of the national and international level of excellence in the nursing graduate program, since it cannot be ignored that Nursing is a science-in-the-making. Thus, care should be taken to accept the H-index in order to not hinder the insertion of new researchers to the postgraduate teaching staff, thus preventing generational sharing among peers, given that the index cannot measure the category made up by young researchers.

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NOTES

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Data collection: Guimarães GL.

Analysis and interpretation of data: Guimarães GL.

Discussion of the results: Guimarães GL.

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ACKNOWLEDGMENT

I thank the Postgraduate Program in Philosophy of the Federal University of Minas Gerais for the opportunity to conduct the postdoctoral internship under the supervision of Prof. Dr. Túlio Roberto Xavier de Aguiar.

CONFLICT OF INTEREST

There is no conflict of interest.

HISTORICAL

Received: July 12, 2018

Approved: March 01, 2019

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