Vol 1, No 1, 2020
Journal of Medical Library and Information Science

doi.org/10.22037/jmlis.v1i1.33046

Citation: Ashrafi-rizi H, Kazempour Z. Scientometrics immigrants: A new concept for health managers and researchers. J Med Libr Inf Sci. 2020;1(1):e11.

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Commentary article

Scientometrics Immigrants: A New Concept for Health Managers and Researchers

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Abstract

Today, we sometimes see the resistance of researchers and managers of the health system to the concepts of scientometrics and their application in policy and planning, which is partly due to the inappropriate use of these concepts of science production and evaluation of researchers. Lack of sufficient knowledge about this field's benefits seems to be the main reason for this confrontation. Accordingly, researchers and managers who have a defensive attitude towards learning and using scientometrics concepts can be called "Scientometrics Immigrants," and people interested in this field can be called "Scientometrics Native." This defensive attitude can be due to aging, lack of sufficient opportunity to learn these concepts, distrust of indicators, etc. Recognizing and using scientometrics concepts (in general) in different dimensions can help other disciplines, health-related institutions, researchers, and managers in research and provide the basis for their research's quantitative and qualitative growth. Therefore, this article aims to examine scientometrics immigration and its dimensions and the role of librarians and medical informants, as well as scientometrics specialists in helping other individuals and health institutions in the field of production and dissemination of science.

Recieved: 29 Nov 2020
Accepted: 07 Dec 2020

Keywords:
Scientometrics immigrants
Health researchers
Health managers
Medical librarians

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Introduction

For various reasons, the health system, including protecting patients' health and lives, improving the quality of healthcare, and reducing medical costs, should use the health-related research results. On the other hand, any policy in the health system without relying on scientific research results is a step in a direction that will sometimes be irreparable. For example, in the evidence- based medical process, medical staff make appropriate clinical judgments and decisions based on the latest scientific findings, as well as attention to patient values. The basis of this decision is the existence and use of credible and valid information. Heidari believes that in order to improve the production of science and technology and identify ways of progress, the health system needs policy and planning to measure, control, and manage the development of science and technology in quantitative and qualitative dimensions based on scientometric indicators in the health area (1).

Although today scientometrics is sub-disciplines of Medical Library and Information Science in the Ministry of Health and Medical Education and many health disciplines have used the concepts, indicators, and scientometric research results (citation, self-citation, impact factor, H-index, and quartiles) in recent years, sometimes we see the defensive attitudes of some

scientific disciplines and even executives in the health system towards concepts of this field and their application in policy and planning (1), and sometimes using it inappropriately. This confrontation and opposition can be due to the inappropriate use of concepts in this field, a mere quantitative view of science, lack of knowledge of academics about the benefits of these indicators at the individual and society level development. Lack of sufficient knowledge about this field's benefits seems to be an issue that needs further investigation. Therefore, in this article, we intend to address some of them. However, it is natural to create a defensive attitude towards some areas that can be improved with solutions. In the information technology area, this defensive manner and lack of interest in new technologies are called "Digital Immigrants"; on the contrary, people who are eager and interested in updating themselves are called "Digital Native." In fact, it refers to a person who, for various reasons, avoids learning and using information technology in his/her personal and professional life (2, 3). By adopting this concept, the term "Scientometrics Immigrants" can be used for academics (faculty members, researchers, executive, educational, and research managers) who, for some reasons, avoid learning and using scientometric concepts in their professional life.

In contrast, for enthusiastic, interested, and up-to-date people in this field, it can be used as "Scientometrics Native." These reasons can be due to aging, lack of appropriate opportunities to learn these concepts, distrust of indicators and scientometric research results, and a quantitative approach to science in practice, such as a quantitative view of researcher evaluation, departments, and research centers. Nevertheless, the reality is something else other disciplines need to know; concepts of scientometrics (especially qualitative concepts of scientometrics, such as research effectiveness, etc.) in various dimensions can help other disciplines and institutions related to health and provide the basis for their quantitative and qualitative growth. It should be noted that the knowledge of other disciplines of scientometrics should be at the level of basic /general concepts because very specialized concepts in the field of Medical Library and Information Science are taught in the form of specialized courses. To properly understand this issue, it is necessary to identify the stakeholders in the field of scientometrics in the health system:

1. Senior Managers of the Ministry of Health and Medical Education

This group of people includes policymakers (ministers, deputies, and chancellor, etc.) in the field of science and technology. Therefore, their knowledge of these concepts will be very influential in how to decide on the current and future status of science and technology and the progress in the health area. They should be familiar with research effectiveness indicators, science and technology evaluation indicators, innovation indicators, researchers evaluation indicators, journals, research centers, industrial relationship offices, and so on. The extent to which they are familiar with these concepts will be the basis for scientific orientation in the health system.

2. Managers and research experts in universities

This group's attitude and performance will be very much affected by the regulations and approvals of the first group. Therefore, this group, apart from general knowledge about the concepts required by the first group, should deal with other concepts, such as how to select a researcher, journal and top departments in the field of research, how to award and attract research grants, how to conduct and settle research projects and theses, how to improve the quantity and quality of journals and research centers, educate faculty members and researchers, identify fake and authentic journals.

3. Managers and educational experts in universities

Nowadays, the deep link between education and research and many policies and planning also affects education. Therefore, these concepts help them attract international students, attract faculty to teach, evaluate departments, identify reliable sources for curriculum review, assign the students to each department, scientific mapping of disciplines, and evaluate faculty members to attract and promote. Hence, they should be familiar with concepts such as citation, self-citation, impact factor, how to find the required valid sources, H-index, and quartiles.

4. Health faculty members and researchers

Each faculty member needs some scientometric concepts to perform educational, research, and executive affairs. The promotion of faculty members is very much affected by the faculty member's knowledge of the requirements of promotion and preparation of promotion documents. Some of the concepts needed for faculty members in the process of their activities are: recognizing and using citation databases such as Web of Science, Scopus, etc., receiving and increasing citations, self-citations, impact factor of journals, recognizing fake and valid journals, research-based social media membership, how to find the index of a published article, how to update course content, personal and professional development.

Conclusion

Scientometrics Immigrants are academics (faculty members, researchers, executives, educational, and research managers) who are unfamiliar with scientometrics concepts for some reasons. Whatever the reason for this, it is necessary to provide appropriate platforms for training and learning in this regard (at least at the basic level) by the departments of Medical Library and Information Science, scientometrics experts, and health libraries. Development requires different platforms, and one of these platforms is empowered faculty members and health researchers with high capabilities in various educational, research, and executive affairs. These abilities are achieved through various methods, including gaining a relative knowledge of research and scientometrics concepts. A faculty member needs to know where he/she stands in the specialized profession and research and how he/she can identify and address research gaps in the relevant field, which require special scientometric skills. Today, a scientometrics expert can accurately present the research gaps in his/her field with detailed statistics to a faculty member. However, these analyzes must be accurate and understandable to other disciplines in order to be effective. Failure to use these concepts by faculty members, researchers, executive, educational and research managers, and their lack of motivation will be disrupting the production and evaluation of science and technology in the health system and at the macro level in the country. So, this is the science immigrant phenomenon. Therefore, in addition to promoting scientometrics-related training for academics, it is recommended that senior managers act more on evidence-based policymaking and decision-making and involve Medical Library and Information Science and scientometrics professionals as consultants/assistants in decision-making. This means a reduction in scientometric immigrants in universities.

Declarations

Acknowledgment

Authors wish to thank the staffs of School of Management and Medical Information Sciences, Isfahan University of Medical Sciences, Isfahan, Iran.

Conflicts of Interests

The authors have declared that no competing interests exist.

Ethical statement

The authors have observed all the ethical issues in writing and publishing. All the authors met the criteria of authorship based on the recommendations of the International Committee of Medical Journal Editors.

Funding and support

None

Authors' contributions

Hasan Ashrafi-rizi conceived the original idea, designed the scenarios and collected the data. Hasan Ashrafi-rizi and Zahra. Kazempour: carried out the analysis of data, drafted the manuscript approved the final version that was submitted, and revised it.

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