

Short Communication

Identifying Nursing Research Priorities of Slovenian Higher Healthcare and Nursing Educational Institutions: A Bibliometric Analysis

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Keywords

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Abstract

At the time of establishment the majority of Slovenian nursing institutions offered undergraduate nursing study programme, but over the years developed study programmes in the field of health care. Therefore, many nursing colleges changed their institutional name to "include health care" or health sciences". Some of them have also changed their status from college to faculty level. However, their reflected image is still perceived as "nursing educational institutions". Nevertheless, in the view of international mobility it is necessary to objectively analyse their true "research" identity in the form of research priorities derived from their internationally recognised research. In the present paper we performed this task using bibliometric analysis. The analysis showed that Slovenian higher educational health care institutions research, with the exception of one institution, is primarily not focused on nursing, but either on computer science/medical informatics or psychiatry.

INTRODUCTION

International collaboration, participation in international research projects, and professor, researcher and student mobility has become an established practice in successful research and educational environments [1]. This practice has been slowly accepted also by Slovenian higher health care and nursing educational institutions (hereafter HHCNEI). In the beginning of 90ties there were only two HHCNEIs in Slovenia. This number has risen to 8 in recent years. At the time of establishment the majority of institutions offered undergraduate nursing study programme, but over the years developed study programmes in the field of health care. Therefore, many nursing colleges changed their institutional name to "include health care" or health sciences". Some of them have also changed their status from college to faculty level. However, the staff mostly remained the same, mission statements didn't changed a lot and for most of them nursing is still the main pedagogical and research topic. Consequently their reflected image is still perceived as "nursing educational institutions". Never the less, a critical question remains, if this image is also "proved" in international research

literature production. In the view of international nursing student, professor or researcher mobility it is only fair that this question is answered analytically.

The aim of this paper is to use bibliometric analysis to identify internationally recognised research priorities of Slovenian HHCNEIs related to nursing. According to de Bell is bibliometric analysis consists of various methods within which we can quantitatively analyse academic literature production (such as articles, books and patents and their references: citations, and co-citations) [2]. Among the most commonly used bibliometric methods are citation analysis and content analysis. Bibliometric methods are being used in various fields such as information science; however bibliometrics have wide applications in other areas. Bibliometric methods are used to explore the impact of particular field, researchers, or the impact of a particular information source (article) [3,4].

MATERIALS AND METHODS

The information sources retrieved from Thomas Reuters Web of Science (WoS) bibliographical database were used for our

bibliometric analysis. The search was made on 29th of November 2014. Our aim was to collect and analyse the most comprehensive corpus of information sources (journal articles, proceedings papers) related to nursing research in general. In that manner we defined a very broad search term, namely "Nursing". To assure broad extraction of information sources we searched in the Topic field including information source title, abstract and WoS category. We were interested in full papers only, therefore we excluded all types of information sources like abstracts, letters to editors, comments and similar. Consequently the search was limited to Document type = (Article OR Proceedings paper). Whereas the analysis was aimed to Slovenian HHCNEIs, the final search limitation was set to Country = Slovenia. In this manner we extracted 196 information sources. While some papers were published by non educational institutions (i.e. hospitals, health centres), we manually excluded all sources not affiliated with a Slovenian HHCNEIs. In this way four HHCNEIs showed their search literature productivity, publishing altogether 122 information sources. A separate corpus was formed for each HHCNEI. Each corpus was analysed using the built in WoS services in the manner to identify all WoS categories tagged to an individual information source (note that a single information source can be tagged with several WoS Categories). The next step was to merge related categories into the research priorities. For example "nursing", "geriatric nursing", "general nursing" were merged into priority "nursing" and "computer science information system", "computer science interdisciplinary applications" and "computer science artificial intelligence" were merged into the priority "computer science". For each HHCNEI, three most frequent research priorities were selected. Additionally, the dynamics of research literature production for each HHCNEI was analysed.

RESULTS AND DISCUSSION

There are eight HHCNEIs registered in Slovenia. From the oldest to the newest one they are: Faculty of Health Sciences,

University of Ljubljana; Faculty of Health Sciences, University of Maribor; Faculty of Health Sciences, University of Primorska; Faculty of Health Care Jesenice; Faculty of Health Sciences Novo Mesto; University College of Health Sciences Slovenj Gradec; Alma Mater Europaea, and College of Nursing in Celje. Hereinafter the above institutions will be referred as HHCNEI 1, HHCNEI 2, etc. As presented in (Figure 1), from eight HHCNEIs, four exhibited international nursing research literature productivity.

The most productive one was HHCNEI 1 (66 information sources) followed by HHCNEI 2 (44 information sources). The first paper was published in 1994 by authors from HHCNEI 1 and the first paper by authors of HHCNEI 2 was published in 1999 followed by authors of HHCNEI 3 in 2008 and by authors of HHCNEI 4 in 2009.

The main internationally recognised research priority (Table 1) in HHCNEI 1 is nursing/healthcare followed by computer science/medical informatics. The same priorities, but in the opposite rank were identified at the HHCNEI 2; namely computer science/medical informatics as a main priority and second priority nursing/health care. Psychiatry followed by nursing/health care is two main research priorities in HHCNEI 3 and HHCNEI 4.

It is interesting to note that according to the internationally published information sources, focus on nursing is the main research priority only at the HHCNEI 1. The nursing directed research based on the published information sources on other faculties is focused on either computer science/medical informatics or psychiatry.

CONCLUSION

The growing needs of the population, increased number of older people, various infections, and chronic diseases caused increased need for well educated health care professionals. Therefore, new higher educational institutions were established, not only in Slovenia, but within whole Europe. The main mission

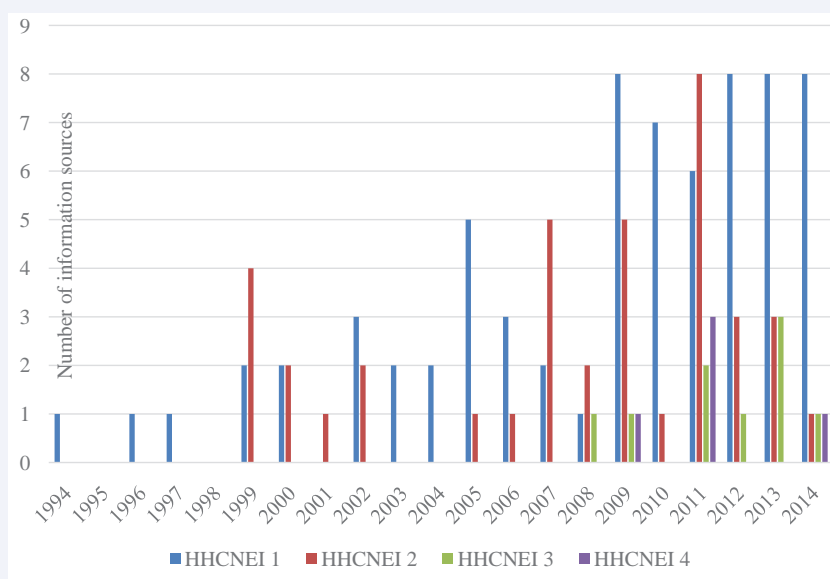


Figure 1 The dynamics of international nursing scientific literature production in Slovenian HHCNEI's.

Table 1: The research priorities of Slovenian HHCNEIs.

Name of the institution	Number of information sources	Priority 1 (Number of information sources)	Priority 2 (Number of information sources)	Priority 3 (Number of information sources)
HHCNEI 1	40	Computer science/medical informatics (31)	Nursing/health care (13)	Medicine general internal(8)
HHCNEI 2	66	Nursing/health care (18)	Computer science/medical informatics (13)	Medicine general internal(9)
HHCNEI 3	10	Psychiatry (3)	Nursing/health care (3)	Education scientific disciplines (2)
HHCNEI 4	6	Psychiatry (3)	Nursing/health care (3)	Medicine general internal(1)

of those institutions was to educate high profile health care professionals and scientists for the future. Within this mission for each higher educational institution it is very important to establish international visibility of scientific research. International visibility of scientific research actually demonstrates the maturity of individual higher educational institution, as well as set research priorities as such. The aim of this paper was to use bibliometric analysis to identify internationally recognised research priorities of Slovenian HHCNEIs related to nursing. This study brings to light interesting findings, namely that internationally recognised nursing research at Slovenian HHCNEIs, with the exception of one HHCNEI is not focused on nursing, but either on computer science/medical informatics or psychiatry. In that manner it differs from the perceived public image of Slovenian HHCNEIs and might give improper impression to foreign researchers and students, seeking mobility. On the other hand, such a situation raises the question of actual performed research activities and the overall development of the nursing profession, which is in fact based primarily on national level. Here arises another question, is it even possible to develop exclusively on the basis

of national level, without taking into account the international context, the exchange of practices, knowledge, skills, experiences etc. Although this might sound negatively, the positive message conveyed is that in the future Slovenian HHCNEIs should invest more effort in international scientific research in the field of nursing and consequently publish more international articles and participate on conferences from nursing or reconsider their research priorities and mission statements in a way that it will reflect their true "research" identity.

REFERENCES

1. Souto - Otero M, Huisman J, Beerkens M, de Wit H, Vujić S. Barriers to International Student Mobility Evidence From the Erasmus Program. *Educational Researcher*. 2013; 42: 70 - 77.
2. De Bellis N. *Bibliometrics and Citation Analysis*. Lanham, Maryland, Toronto, Plymouth, UK: The Scarecrow Press, Inc. 2009.
3. Wikipedia. (2014, October 13). *Bibliometrics*. Retrieved December 11. 2014.
4. Garfield E. The History and Meaning of the Journal Impact Factor. *Journal of American Medical Association*. 2006; 295: 90-93.

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