

## **Research Assessment of Iranian Medical Universities, an Experience from a Developing Country**

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### **Abstract**

International ranking of universities by bibliometric assays has received a great attention in recent years. The developing countries have commenced to build their own infrastructure of research and post graduate training during the past couple of years. In 2000, the Ministry of Health and Medical Education of Iran began an annual national survey for assessing research activities in medical universities and their affiliated institutions by applying a customized ranking method. Research indicators were scored in three topics; Stewardship, Capacity Building, and Knowledge Production. In 2000, there were about 300 published medical articles in ISI/Thomson and PUBMED from the whole country. This number increased up to 3376 in 2007. The score of indexed papers in international databases per academic member rose from 0.1 in 2000 to 0.63 in 2007. The share of global articles (in the field of Medicine) grew from 0.06% in 2000 to 0.55% in 2007. This rising in article output led to a change from grade 57<sup>th</sup> in 2000 to 27<sup>th</sup> in 2007 in the ranking system of Scopus database. The number of local medical journals, which were 53 in 2000, increased to 141 at the end of 2008. This rising scores was ongoing while the growth of the total staff of the academic members was about 25% (from 9086 in 2000 to 11324 in 2007). The number of the short training courses rose from 458 in 2000 to 1097 in 2007. The registered research projects in health topic rose from less than 3878 in 2000 to 6816 in 2007.

**Keywords:** *University Ranking, WHO, Health Research System, Iran*

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International ranking of universities by bibliometric assays has received a great attention in recent years. There are several ranking methods among them, three have attracted more interest; Academic Ranking of World Universities (ARWU) or Shanghai Jiao Tong University index (developed in 2003), the Times Higher Education Supplement or THES (developed in 2004), and Webometrics (developed in 2006) (1-3). The ARWU method is mainly based on research quantity and quality, THES is focused on education as well as research, and the Webometrics mostly considers the information accessible from university web pages.

Research analysis by these methods is mostly based on the evaluation of end products of research i.e. number of published papers and their quality (papers published in the Nature or Science), and researchers i.e. distinguished Alumni of an institution (Nobel Prize winners) and highly cited staff.

The developing countries have commenced to build their own infrastructure of research and post graduate training during the past couple of years and they had been far away from organized research governance because of political and economical limitations.

In these countries, major health problems are different from the developed countries and are not usually within the research field of the most researchers in the west. Therefore, the chance for citation of a paper from these countries is low, especially when the result of research is published in a local journal.

In 2000, the Ministry of Health and Medical Education of Islamic Republic of Iran began an annual national survey for assessing research activities in medical universities and their affiliated institutions by applying a customized ranking method. All of the medical universities were involved in this ranking system. That method was revised later by adding some indicators of the WHO Health Research System Analysis indicators (HRSA) (4, 5). In this report, we briefly introduce this method and the consequences of its application.

According to the level of training and research capabilities, the universities were categorized into three types and evaluated in their groups.

Research indicators were scored in three topics; Stewardship, Capacity Building, and Knowledge Production as summarized below. It was a modified version of a more detailed WHO ranking method, Health Research System Analysis.

Stewardship indicators;

- Assessment of priority setting process
- Formulation of a five-year strategic plan and monitoring to achieve its goals
- Establishment and performance of university ethic committee

Capacity building indicators;

- Short training programs for staff;
- Number of held International and national congresses;
- Reward achievements in national and international scientific gatherings;
- Webometry of the university and their affiliated institutions;
- Establishing and empowering student research group Knowledge production indicators;
- Number of articles indexed in ISI/Thomson and Pubmed/Medline;

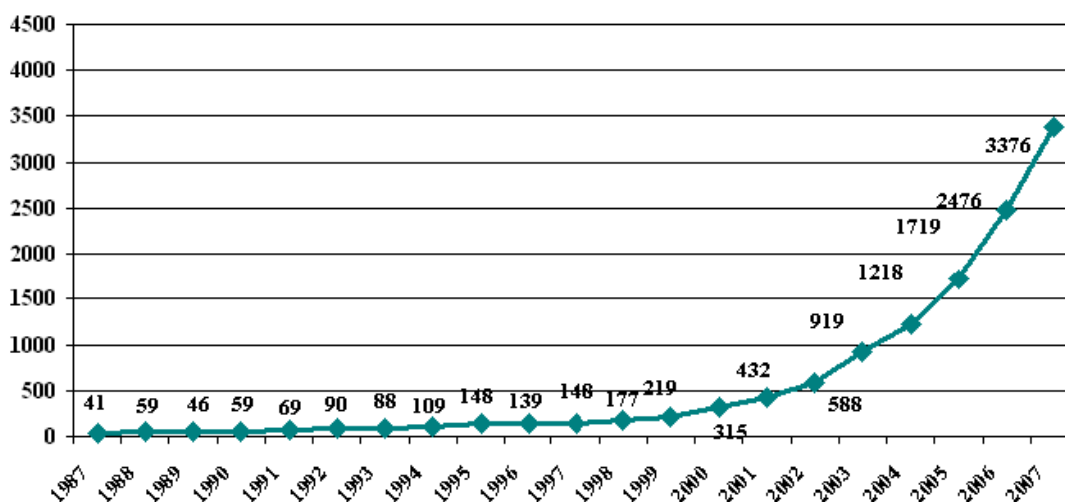
- Number of articles indexed in other indexed international and national databases;
- Abstracts presented at national and international congresses;
- Number and quality of research projects;
- Published Books;
- Number of patents;
- Applied interventional projects which improved Health system;
- Citations of the published papers in textbooks and peer review journals.

Each of these indexes had an individual score. Final score was calculated by adjusting the crude score to national budget and number of academic staff of the universities.

In 2000, there were about 300 published medical articles in ISI/Thomson and PUBMED from the whole country. This number increased to 3376 in 2007 (Fig. 1). The score of indexed papers in international databases per academic member rose from 0.1 in 2000 to 0.63 in 2007. The share of global articles (Medicine) grew from 0.06% in 2000 to 0.55% in 2007. This rising in article output led to a change from grade 57<sup>th</sup> in 2000 to 27<sup>th</sup> in 2007 in the ranking system of Scopus database (6).

The number of local medical journals, which were 53 in 2000, increased to 141 at the end of 2008. This rising scores was ongoing while the growth of the total staff of the academic members was about 25% (from 9086 in 2000 to 11324 in 2007).

The number of the short training courses rose from 458 in 2000 to 1097 in 2007. The registered research projects in health topic rose from less than 3878 in 2000 to 6816 in 2007. The topics of 60% of these projects matched with the universities' priorities in their strategic plan. Now in all of the universities, student research groups have been established and are encouraged to engage in research. The research activities comprised training workshops held by students themselves (376 workshops in 2007) and involving in research projects from designing to implementation and scientific writing.



**Fig. 1:** Published medical articles in Medline and Thomson/ISI data bases from the Islamic Republic of Iran (1987-2007)

## Conclusion

Developing countries have mostly new established universities, which should be compared with each other by a certain list of research indicators in a separate category. These indicators should measure mostly capacity building, stewardship, and the performance of research in solving the common health problems as well as knowledge production. Using a customized list of criteria of HRSA for national university evaluation could be more suitable as a tool for ranking in these countries before entering them into the international university ranking systems. We think that applying this type of ranking system can be used as the main guide in formulating strategic and development plan to build research infrastructure and facilitates knowledge production in developing countries.

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