

MEDICAL INFORMATION CENTRE, BULGARIAN CITATION INDEX, AND MODERN BULGARIAN SCIENCE. I. BULGARIAN MEDICAL JOURNALS (1993-1998)

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The Medical Information Centre of Sofia is an established prestigious institution of rising national and international importance for the medical sciences and public health. The present communication initiates a series of scientometric investigations using the Bulgarian Citation Index (BCI) data-base of the communication patterns in different branches of modern Bulgarian science. The analysis of Bulgarian medical journals published in 1993-1998 shows several essential features of the citation behaviour of the authors arguing of the still insufficient awareness of the national achievements. A total of 322 issues from 47 journal titles have been already processed. They contain 2028 citing articles with a total of 26092 references. The citations to Bulgarian publications amount to 2484 or 9,5 per cent of all the citations. The following journals are most-cited in this sample: "Revmatologiya" (107 citations), Savremenna meditsina (78), "Stomatologiya" (51), "Pediatriya" and "Farmatsiya" (40 citations each).

Key-words: Bulgarian Citation Index, Bulgarian medical journals, Medical Information Centre of Sofia, scientific communications, citation analysis

Recently, the interest in science citation issues increases in Bulgaria, too, where painful but obligatory socio-economic changes should be realized at the threshold of the information society of the new millenium. It has to be emphasized that Bulgarian scientometrics emerged at the international scene already in 80s although the unfavourable socio-politic en-

vironment impeded a priority development of citation research. In 1994, however, the financial support of the National Research Fund in Bulgaria enabled the beginning of the practical realization of the Project of a Bulgarian Citation Index (BCI) (1,5). It is planned to cover the whole scope of scientific periodicals in Bulgaria and to provide data about the Bulgarian publications and their citations in SCI® and SSCI® as well.

The objective of this series of research communications is to demonstrate

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the most essential scientometric features of the infrastructure of scientific information exchange within the Bulgarian community belonging to large science groups (biomedicine, natural sciences, technology, agriculture, social and behavioral sciences, etc.) as analyzed using the variety of capacities provided by BCI. The present paper describes in brief the role of the Medical Information Centre of Sofia (MIC) and reports some preliminary results from the scientometric investigation of the articles published in Bulgarian medical journals in the 90s.

Nowadays, MIC is an established prestigious institution of rising national and international importance for the medical sciences and public health. It remains the only component of branch nature of the one-time national system for scientific and technical information that has not "vanished" after the "tender revolution" in 1989 which has caused, among other things, the disintegration of the traditional scientific-informational infrastructure in Bulgaria. In fact, MIC "has saved" the Bulgarian medical periodicals and permanently realizes an own broad-spectrum publishing activity under the conditions of limited state financing. Thus MIC represents a harmoniously organized and undoubtedly flourishing system for scientific medical information. MIC is functionally and administratively integrated with the Central Medical Library in Sofia. Besides MIC plays an important role for the further improvement of the communication environment in the national medical science and university education under the conditions of a transition to mar-

ket economics. Current maintenance and continuous enrichment of several medical and pharmaceutical data-bases (e. g., ALIS Database, CLIENT Database, Who's Who in Bulgarian Medicine), of hospital-management information systems and modern archives of national priority could be mentioned to briefly describe the activities of MIC facing the rising requirements of the new millenium (4).

MATERIAL AND METHODS

A retrospective retrieval in the BCI data-base during the period from 1993 till 1998 was carried out concerning a limited number of scientometric parameters such as citations to articles in Bulgarian journals, citations and self-citations of Bulgarian authors and journals, and thematic profile of publications in the Bulgarian medical journals. It should be emphasized that due to the limited volume of the present communication only a few scientometric distributions could be presented. In order to encourage the further improvement of Bulgarian journal's quality, in future not every journal but only selected journal titles will competitively be processed by BCI.

RESULTS AND DISCUSSION

The analysis of the year cumulations of BCI revealed typical stratification patterns concerning the disciplinary profiles as a whole and the single topics, the individual publishing and cited authors and research collectives, and the citations to

the same and the other Bulgarian journals.

In the already processed 322 issues of 47 journal titles, there were 2028 citing articles containing a total of 26092 citations. The number of citations to publications by Bulgarian authors (2484 citations) and their relative share (9,5 per cent of all cited publications) during the whole 6-year period has increased in comparison with the initial data covering only 250 citing articles where there were 150 citations to Bulgarian publications or 4,7 per cent of all 3200 citations (2).

In the spirit of traditional

scientometrics we should mention the Bulgarian medical journals most frequently cited during this period: "Revmatologiya" (107 citations), "Savremenna meditsina" (78), "Stomatologiya" (51), "Pediatriya" and "Farmatsiya" (40 each), etc.

Some summarized data from the analysis of the citations to Bulgarian journals in the "Revmatologiya" journal in 1994-1997 are presented in Table 1. The annual distribution in the "Savremenna meditsina" journal of the citations to the other Bulgarian journals in 1993-1997 is shown in Table 2.

Table 1

Scientometric characteristics of Bulgarian journals' presentation in "Revmatologiya" (1994-1997)

Publ. year	Citing art.	Citations to other journ.	Citations to "Revm."	Author's self-cit. of "Revm."	Journal self-cit.	Articles with cit. to "Revm."
1994	30	4 (7)	2	2	2	1
1995	39	8 (11)	15	12	12	10
1996	36	4 (7)	11	10	10	6
1997	19	2 (3)	8	7	7	5

Total citations to "Revm.": 36

Of them self-citations: 31

Other Bulgarian journal titles: 10

Citations of articles in them: 28

Articles with cited articles in "Revm.": 22

Table 2

Scientometric characteristics of "Savremenna meditsina" (SM) in 1993-1997

years	citations to sm		self-citations to other journals				citations to other journals			
	authors' self-cit.	other authors	bulgarian		foreign		bulgarian		foreign	
			journ.	papers	journ.	papers	journ.	papers	journ.	papers
1993	5	1	13	31	9	10	8	9	0	0
1994	6	5	9	14	3	3	7	13	0	0
1995	6	4	12	14	10	10	7	8	2	2
1996	2	6	6	13	11	13	9	12	2	2
1997	4	3	16	21	14	15	14	17	5	5
total	23	19	32	93	39	51	32	59	9	9

It is obvious that much has to be done to encourage the effective penetration of ideas, methods, and data from one discipline into the other research fields as well as to popularize the national achievements among the younger colleagues.

The necessity of a forthcoming calculation of the so-called "Impact Factor" and "Immediacy Index", similarly to that in SCI®(3), of the processed Bulgarian periodicals should be properly interpreted. It is known that "Doklady BAN", the only Bulgarian representative in SCI® during the last decades, was already excluded because of its permanently rather low "Impact Factor" values. A much greater number of journals belonging to different scientific disciplines should be processed by BCI to enable reasonable comparisons and the timely identification of interdisciplinary links.

An important peculiarity of the thematic orientation of the national biomedical research consists in the restrictness to single topics in most journals. In the "Hirurgiya" journal, articles dealing with diseases of the abdominal organs prevail while those devoted to cardiovascular and/or pulmonary pathology are scanty. Besides in some journals the number of publications by certain eminent authors is much greater als those of the whole national community. In the "Revmatologiya" journal, for instance, there are few authors who have published most papers in 1994-1997. As a whole, some problem-oriented circles of interdisciplinary nature prevail such as oncology, image diagnostics, immunology, clinical

epidemiology and clinical pharmacology as well. We would not allow us to outline the most productive and most frequently cited and/or self cited Bulgarian authors because of the restricted investigation sample, on the one hand, and of the predominant orientation towards foreign journal publications instead of the due respect to the our national periodicals, on the other hand.

There is a certain bibliographic and polygraphic improvement of the Bulgarian scientific journals in the recent years. Regularly, there exist several significant features of the scientific articles published in European and American journals such as full author's addresses, abstracts in English, key-word indexing (even according to MESH of *Index Meducus* in the journals published by MIC), relatively precise reference lists, etc. The incorporation of e-mail addresses of the main authors should additionally be recommended to facilitate international exchange of information.

In conclusion, the continuously growing BCI data-base provides a reliable and objective information to the organs of science policy and management at any levels as well as to the researchers themselves. The created software enables multi-aspect scientometric investigations directed towards the further improvement of the communication infrastructure in Bulgarian science and of the information culture of our scientists. The distribution of BCI in foreign countries will undoubtedly promote a more active affiliation of our teams to leading scientific achievements in the world.

REFERENCES

1. Български цитатен указател. Под ред. Х. Мутафов. *Из опыта здравн. завед.*, 1996, № 3, 3-68.- 2. Томов, Д., Х. Мутафов, Т. Григорова, К. Дяков. В: 25 Години ВМИ-Плевен. Науч. сес. Плевен, 16-17.V.1997 г. Програма и резюмета, 49-50.- 3. Garfield, E. Citation Indexing - Its Role and Application in Science, Technologies, and Humanities. Philadelphia, ISI Press, 1983. XIX, 274 p.- 4. Mutafov, H. In: The Ways of Development and Directions of Cooperation of Medical Libraries. An Internat. Conf. Warsaw, 16-18.V.1996. Proceedings, 15-24.- 5. Томов, Д., Н. Мутафов, С. Диачов. *Scr. Sci. Med. (Varna)*, 29, 1997, Suppl. 4, 179-184.

Център за информация по медицина, Български цитатен указател и съвременна българска наука. I. Български медицински списания (1993-1998)

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Резюме: Центърът за информация по медицина-София (ЦИМ) се утвърди като авторитетна институция с нарастващо национално и международно значение за медицинската наука и практическото здравеопазване. С настоящото съобщение започва поредица от наукометрични изследвания с помощта на базата-данни "Български цитатен указател" (БЦУ) върху научните комуникации в различните отрасли на съвременната българска наука. Анализът на българските медицински списания, публикувани през 1993-1998 г., показва редица съществени особености на цитационното поведение на авторите, свидетелстващи за все още недостатъчното познаване на постиженията на сънародниците. Вече са обработени 322 книжки от 47 заглавия на списания. В тях се съдържат 2028 цитиращи статии с общо 26092 цитата. Цитиранията на българските публикации са общо 2484 (9,5 % от всички цитирания). Най-цитираните български списания в тази извадка са "Ревматология" (107 цитата), "Съвременна медицина" (78 цитата), "Стоматология" (51), "Педиатрия" и "Фармация" (с по 40) и др.