

Evaluating the rate of international scientific journal use in the libraries of four educational and research centres

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ABSTRACT

Background: Reviewing the rate of journal use is a known and conventional way of studying the cost effectiveness of the most expensive sources of the libraries in the educational centres. This process is routinely carried out in the libraries of the developed countries.

Purpose: To assess the usage rate of the periodical "international journals" by faculties and others, and their related costs (in \$US) in the libraries of four educational and research centres in Tehran.

Methods: In a descriptive cross – sectional study, the rate of international scientific journal use by the faculty members and others was studied. Depending upon the rate of journal use in one month, three groups were classified: Group 1: with use of 1 journal /month; Group 2: with 1-3 journal usage/month; and Group 3: with 3 and more journal usage/month. The mean monthly journal use and the related costs of the three groups were measured.

Results: Among the entire journals in the studied libraries, 87 (27.6%) belonged to group 1, 121 journals (38.4%) placed in group 2 and finally 107 journals (34%) were in group 3. Cost per use for each journal in Masih Daneshvari, Labbafinezhad, Rasool-E-Akram and Imam Hospitals were 10.52, 14.42, 14.84 and 13.35 \$US respectively.

Conclusion: According to our findings, about 2/3 of the journals were used less than three times per month. The same situation exists with little difference in the rest of the medical and non-medical educational centres of the country. To improve the present situation, we can not only exclude those journals which are used less frequently but also encourage the professors to use the journals themselves and to persuade the students to take advantage from the relevant journals during their education. It is also recommended that the journals in group 1 and 2 (less frequently used journals) to be purchased and stored by a National Library Centre only and journals of group 3 by individual educational centres. Regarding the increasing facilities of electronic journal usage, it is recommended to use not only these types of journals, but also to preserve the more frequently used journals, in order to improve the present situation.

Keywords: INTERNATIONAL SCIENTIFIC JOURNALS, RATE OF EFFECTIVE JOURNAL USE, ELECTRONIC JOURNALS

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Introduction

Reviewing the usage rate of journals present in the libraries of educational centres is a known and conventional way for studying the benefits gained from these valuable and precious sources. These reviews are routinely carried out in the libraries of educational centres in the developed countries (1). By referring to different sources e.g. Persian Index Medicus, we could not find such a published study in this regard in Iran. However, projects and plans in this direction are being conducted at the university level. Each year about Eight Million \$US is spent for purchasing scientific journals for the medical universities of the country, by the Undersecretary of Research

and Technology of Ministry of Health and Medical Education. Each year, the subscription fee of medical journals increases by 11 percent. This increase in the subscription fee is not a constant process e.g. in 1986 the subscription fee had increased by 7.2% while the year after i.e. 1987 the rise had been about 13.4%. In developing countries due to higher expenses (e.g. the high cost of employment and transportation) and also due to existing difference in the exchange currency rates, the cost is even much higher. Until 1994, the Ministry of Health made the purchasing of the scientific journals and books and later on it was distributed between the medical universities of the country. The most important problem that existed in this direction was the errors made in the

process of sending the journals to the respective universities. From 1994, the policy of "centralized purchasing" shifted towards the policy of "semi-centralized" purchasing. In this policy, the journals, after being paid for by Ministry of Health and Medical Education, are sent directly to the respective universities by the publishers. In this direction a "welfare bye-law" was passed in 2001 (1381) and all the purchases are now made according to this law. The number of faculty members and specialized fields present in the considered university, the fluctuation in the value of \$US and the increasing prices of the journals determine the allocated foreign currency to each university.

The usage of scientific journals in the libraries is affected by several factors. The journals are used more frequently by the faculty members and research workers rather than by post graduate students (fellowship), residents and undergraduate medical students. Other factors that affect the usage rate of journals are availability of journals at the work place and the format of the journal (whether a printed material or electronic) (3). Different studies show that due to increasing availability of electronic journals, the attitude for published journals has lessened (2-10).

The aim of this study is to assess the usage rate of international scientific journals present in the libraries of four university-affiliated educational hospitals in the country. It's obvious that this article is a part of a comprehensive study made to determine the usage rate of international journals, its reasons and also to compare the usage rate of printed and electronic journals.

Materials & Methods

In a descriptive cross-sectional study the number of referrals made to the international scientific journals and its usage by the faculty members and others, was reviewed. In this study four centres namely Masih Daneshvari, Rasool-E-Akram, Labbafinejad and Imam Hospitals were chosen. Initially a name list from the entire journals present in the studied libraries was prepared. This listing was categorized according to the field specialty. According to the number of referrals made to the journals in the year 2002, the journals were divided into 3 groups:

Group 1: journals which were used only once or less in a month;

Group 2: journals which were used between 1-2 times in a month.

Group 3: journals that had been used 3 times or more in a month (maximum of 9 times).

Referring to a journal means that when a person goes to the library, takes the journal out of the shelf, studies or copies it and/or burrows the journal. So a journal may be referred once and several articles copied or only be studied in the library without taking any copies from the articles. In this study journal usage means the number of times in a month a particular scientific journal is referred to for studying or copying its articles.

All the journals present in the libraries were listed according to their relations with specialty of the centre or hospital. For each journal the mean monthly referrals and its cost per use (in \$US) was noted in a table. The percentage of different journal groups, the monthly and yearly cost for each group, mean monthly referrals made to each journal group and finally the cost per use for each of the groups were calculated.

Results

Of 315 journals present in the studied centres, 87 (27.6%) belonged to group 1, 121 (38.4%) were placed in group 2, and 107 (34%) belonged to group 3.

Table 1 shows the total number of journals, their groups and usage rate.

TABLE 1. The mean monthly referrals made to the scientific journals in 4 studied research and medical centres, 2002

The number of referral times	Number of journals	Percentage	Mean monthly referral times
Once (Group 1)	87	27.6	0.7
1-2 Times (Group 2)	121	38.4	2.5
3 times or more (Group 3)	107	34	6.4
Total	315	100	3.3

Table 2 shows the number of times a journal was used in a month, total monthly cost and the cost per use. As it can be seen, in Masih Daneshvari Hospital the number of referrals made to different journals was 152 times and the cost per use was 10.52 \$US. Figures for Labbafinejad, Rasool-E-Akram and Imam Hospitals were 76 (14.42 \$US), 132 (14.84 \$US) and 611 (13.35 \$US), respectively. Overall, in all four hospitals the number of referrals made to journals in a month was 971 with a cost per use of 13.19 \$US.

It is seen that the cost per use for each time a journal is referred to and used has an inverse relationship with the "journal group". So that cost

per use for group 1 journals was 29.8 \$US, for group 2 was 18.4 \$US and for group 3 was 8.4 \$US.

TABLE 2. The number of referrals made to scientific journals per month and cost per use in the 4 studied research and medical centres, 2002

Centre	Referral times to the journals per month	Total cost per month (\$US)	Cost per use (\$US)
Masih Daneshvari	152	1598.5	10.52
Rasool-E-Akram	76	1096.3	14.42
Labbafinejad	132	1595.9	14.84
Imam	611	8155.4	13.35
Total	971	12809.2	13.19

TABLE 3. Number of referrals, and the mean cost per use in different journal groups in the 4 studied centres

The mean referral times	The number of journals	The number of referral times	Cost per month (\$US)	Mean cost per use (\$US)
Once or <1 (group 1)	87	87	2591.8	29.8
1-2 (group 2)	121	242	4444.5	18.4
=>3 (group 3)	107	642	5413	8.4
Total	315	971	12809.2	13.19

Discussion

About 2/3 of the journals present in the libraries of research and medical centres were used less than three times per month. In a similar study performed on the international journals present in the libraries of the Medical School of Shaheed Beheshti University between 1990-1992, it was seen that 31.33% of the journals were referred only once in 3 months and 68.67% were not even used once in the same period (11). In another research in 1993, the usage rate of the Latin periodical in Tehran, Amir Kabir and Elm-o-Sanat Universities was evaluated. The maximum usage rate for a time period of three months was 4 times and the minimum cost per use was 29.6 \$US. Meanwhile about 60% of the journals in Tehran University, 75% in Amir Kabir and 80% in Elm-o-Sanat Universities were not even used once (12). In another study performed in the libraries of Biochemical – Biophysical Research Centres of Tehran and Tarbiat Modarres Universities, it was found that the cost per use for each international journal was 43.75 and 60.37 \$US, respective-

ly(13). Additional surveys performed on the libraries affiliated to Medical School of Tehran University, showed that during the time period of 1994-1995, around 68.07% of international journal were not even used once (14). It's clear from this study that the higher the usage rate of a journal, the lower the cost per use (in \$US) and vice versa. Investigations made in this regard, both in Iran and abroad confirm the above fact (15).

A customary way to determine the journals to be omitted, and to optimize their usage is assessing the cost- effectiveness of the purchased periodical international journals. This is performed by studying the usage rate of journal in a specific time period. Some investigators believe that for optimizing and increasing the cost-effectiveness of periodical journals, the use of journals must be encouraged and increased rather than omitting the less frequently used journals (17). On way by which the usage rate of the journals could be increased is to encourage the professors and research workers to use these journals in their teachings and researches. Another way is to carryout weekly or monthly explanatory- topical sessions. The truth is that this change is not possible unless the real reasons for "not referring to journals" are understood or made clear.

One of the important reasons for the inclination towards the electronic journal usage in the recent decade is the increasing availability of the full text of the journals in Internet, but further studies are needed in this regard. The important advantages of electronic journals are: their low cost, availability, easy use, and finally fast access to the texts, although in the field of costs different views exist (18). Despite the presence of different fees and costs in the process of preparing an article, both in the form of a printed material and electronic journals, it is still believed that preparation of an electronic journal is much more economical. As it is anticipated, these types of electronic journals would be improved and extended in the near future, and instead there would be a decline in the process of printing the journals. In other words "Tomorrow Belongs to Electronic Journals" (19-21). Since the topic of electronic journal usage is a controversial issue in Iran, it's necessary to conduct a comprehensive project by the decision makers in this regard. Due to the increasing inclination towards electronic journal usage and also considering the results obtained in this study, several recommendations could be given; Firstly, to increase the number of studied centres and secondly, in case of achieving

similar results, to purchase those groups of journals that are used more frequently (more than three times in a month). Also it is advised that the less frequently used journals (less than three times per month) to be purchased only by a particular library in the country. Finally it is recommended to increase the availability of Internet and thus electronic journals in the country.

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