

Survey of the Relationship Between Article Citations of Dental School Faculty and Status of Publishing in Dentistry Journals

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Abstract: The purpose of this study is to examine the effects of valid references using in the publishing article in the valid journals. In this study, it has been surveyed the 64 journals in dentistry and selected the most important of 13 dental journals. Then, 21 articles that were written by 15 academic members of the Dental Faculty were evaluated with index number of journals that had published articles. For any article, the number of references that there were in each of the selected dental journal was noted in the study. The data were analyzed with the SPSS Ver. 15.0 software. All articles references of Dental Faculty were counted and recorded and they were evaluated with 13 selected journals in the study then they were examined in terms of publishing in selected journals and other journals. Correlation between the number references of 13 selected journals and the total references of each article was significant ($r = 0.795$). It is concluded of evaluating findings that whatever citing to the core journals with higher and valid impact factor is more, the article will be more credible and the possibility of publishing in the same core journals will be more.

Key words: Citations analysis, journals index, credit article, references, Dental Faculty, Iran

INTRODUCTION

Scientific journals constitute the main tools for the advancement and development of science (Ciger, 2003). Evaluating scientific quality is a difficult proposition which has no standard solutions. Ideally, published scientific results should be scrutinized by true experts in the field and given scores for quality and quantity according to established rules (Khan and Pradeep, 2009). Eugene Garfield first outlined the idea of a unified citation index to the literature of science in 1955 (Noruzi, 2005). Citation index was intended as a means to evaluate the significance of a particular work and its impact on the literature and thinking of the period (Chew *et al.*, 2007).

Citation analysis is a core tool in the research discipline known as bibliometrics defined as the quantitative analysis of the units of scientific communication (articles and book chapters etc.) and the citations that connect them (Craig *et al.*, 2007).

Journal citation reports are used widely as the basis for assessing research output (Greenwood, 2007) citation analyses have been widely used in the evaluation of the academic impact of individual scholars, research institutions, scholarly journals and subject disciplines (Huang and Lin, 2011).

For the citation analysis, impact factor, citing half-life, number of references per article and the rate of self-

references of a periodical were used as indicators (Schloegl and Stock, 2004). The journal impact factor is an indicator of journal citations, calculated as the mean number of citations in a given year to journal items published during the preceding 2 years (Seglen, 1997). The impact factor will help us to evaluate a journal's relative importance especially when we compare it to others in the same field. It is obvious that the system should change as it encourages poor research. Researchers need less research, better research and research done for the right reasons, abandoning the use of the number of publications as a measure of scientific ability (Ciger, 2003).

In research evaluation, a widely used approach is to compare the average number of citations to the oeuvre of a research group with that of the average number of citations to the fields in which the research group has published its papers (Bornmann *et al.*, 2008).

List of references in the end of an article is a very important part of any publication. This is so because the cited references form the basis on which the reported work intends to build on (Singh and Chaudhary, 2009).

A citation is defined as the listing of a previously published article in the reference section of a current work this is usually taken to imply the relevance of the cited article to the current study. Information about articles and the citations between them are collected in databases

known as citation indexes (Craig *et al.*, 2007). The listing of references in publications is a convention among scientists for giving credit or recognition to the value of previous study. In recent years, several database producers have noticed the potential of citation indexing and manually added cited references to a subset of their records (Neuhaus and Daniel, 2008).

According to the importance of articles citation and validity and their influence in science development this study evaluated the relationship between Dental Faculty's articles reference and citations and the effect of them in publishing article in ISI and valid journals.

MATERIALS AND METHODS

In this study researchers surveyed the 64 journals in dentistry and selected the most important of 13 dental journals were indexed in ISI, Scopus and Pub Med databases which were available in the library. The journals were sorted by impact factor number.

Then, 21 articles that were written by 15 academic members of the Dental Faculty were evaluated with index number of journals that had published articles. The indexing status of these journals was indicated in the Table 1. By examining the number of references per article and the same number of these references that were published in journals indexed in the ISI, Scopus and Pub Med databases the effect of using these resources to increase the credibility of the articles were analyzed.

We put the 13 journals in the Table 1 and then compared the references of each one the 21 articles whether have been published in journals or not. For any article, the number of references that there were

Table 1: Journals indexing status

Journal title	Impact factor	H index	PII* ranking
Journal of Clinical Periodontology	3.549	71	2193
Journal of Dental Research	3.458	83	1327
Journal of Endodontics	2.953	57	3309
International Endodontic Journal	2.223	51	4268
Journal of Periodontology	2.192	78	2131
Journal of Oral Pathology and Medicine	2.144	42	3030
Operative Dentistry	1.683	45	4478
International Journal of Oral and Maxillofacial Implants	1.978	69	3043
Journal of Oral and Maxillofacial Surgery	1.580	3	3081
Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontics	1.499	55	2726
American Journal of Orthodontics and Dentofacial Orthopedics	1.327	52	2809
Dentomaxillo-Facial Radiology	1.229	36	5119
Journal of Prosthetic Dentistry	1.215	58	3387

*Paper influence index

in each of the selected dental journal was noted in the Table 1. Thus there was determined the amount of use the 13 journals among 21 articles and finally the data were analyzed with the SPSS Ver. 15.0 software.

RESULTS AND DISCUSSION

All articles references of Dental Faculty were counted and recorded and they were evaluated with 13 selected journals in Table 1. Then, they were examined in terms of publishing in selected journals and other journals (Table 2).

For any Dental Faculty article, the total references were calculated and the number of references was evaluated according to the journals in Table 1 and another journals (Table 3).

For example in article 7 in Table 3 was used of the 27 citation of 48 citations by 13 selected journals in Table 1. It should also be expressed this article was published in the journal of 4 in 13 selected journals list which this journals had all three indexes that was mentioned in the study and its impact factor was a relatively high (2.223).

The article number 17 was published in journal of endodontics that was the journal of number 3 in 13 selected journals list was included 23 citations of that list too. Results from the study data indicate whatever the number of references used in the Faculty of Dentistry papers was more of selected journals that article was published in the more credible journals. Data analysis showed that correlation coefficient was significant

Table 2: Journals title that have published Dental Faculty member's articles

Journals title that have published article	ISI index	PUB MED	Scopus
Journal of Periodontology and Implant Dentistry	No	Yes	No
Iranian Journal of Public Health	Yes	Yes	Yes
Operative Dentistry	Yes	Yes	Yes
Journal of Laser Medical Science	No	Yes	Yes
Iranian Journal of Immunology	Yes	No	Yes
International Journal of Pediatric Dentistry	Yes	Yes	Yes
International Endodontic Journal	Yes	Yes	Yes
Implant Dentistry	No	Yes	Yes
Clinical and Investigative Medicine	No	Yes	No
International Endodontic Journal	Yes	Yes	Yes
Research Journal of Biological Sciences	Yes	Yes	No
Phytotherapy Research	Yes	Yes	Yes
DARU	Yes	No	Yes
Pakistan Oral and Dental Journal	No	Yes	No
Journal of Endodontics	Yes	Yes	Yes
Implant Dentistry	No	Yes	Yes
Clinical Implant Dentistry and Related Research	Yes	Yes	Yes
Iranian Journal of Public Health	Yes	Yes	Yes
Research Journal of Biological Sciences	Yes	Yes	No
Dental Traumatology	Yes	Yes	Yes
Journal of Oral and Maxillofacial Surgery	Yes	Yes	Yes

Table 3: References citation of Dental Faculty members of 13 important journals

Article no.	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	Paper total references
1	2	0	0	0	4	0	0	0	0	0	0	0	0	25
2	2	0	0	0	2	0	0	0	0	0	0	0	1	13
3	0	2	0	0	0	0	0	0	0	0	0	0	2	22
4	6	0	0	0	0	0	0	0	0	0	0	0	0	17
5	5	1	0	0	3	0	0	0	0	0	0	0	0	21
6	0	3	0	0	0	0	0	0	0	0	1	0	0	28
7	0	0	20	4	0	0	0	0	0	3	0	0	0	48
8	0	0	0	0	0	0	0	0	1	0	0	0	3	12
9	0	0	0	0	0	2	0	0	0	0	0	0	0	20
10	0	0	5	4	0	0	0	0	1	1	0	0	0	33
11	0	0	0	0	0	0	0	0	0	0	6	0	0	19
12	0	0	0	0	0	6	0	0	0	3	0	0	0	31
13	0	2	0	0	0	2	0	0	0	4	0	0	0	23
14	1	3	0	0	1	0	0	0	0	2	0	0	0	32
15	0	0	10	3	0	0	4	0	0	0	0	0	6	35
16	0	1	0	0	1	0	0	5	0	0	0	0	3	25
17	0	1	0	0	1	0	0	6	0	0	0	0	0	19
18	2	0	0	0	2	0	0	0	0	0	0	0	1	13
19	0	0	0	0	0	0	0	0	5	1	0	0	0	22
20	0	0	4	1	0	0	0	0	0	1	0	2	0	23
21	0	0	0	0	0	0	0	0	1	3	0	0	0	13

between the number of reference used of core journals in the dentistry field and total number of References ($r = 0.795$).

The development along with the spread of the World Wide Web (WWW) represents an informational revolution with rapid, practical distribution and storage of data available worldwide. One of the most prominent examples of enhanced storage and distribution of important information is the development of scientific databases, the significance of which was recognized early. In 1997, PubMed (A combination of both old medline and medline) was launched to the internet by NLM and has become the most popular and one of the most reliable WWW resources for clinicians and researchers. Another acknowledged source of scientific information is the Institute of Scientific Information (ISI) of Thomson Scientific which has been serving as a data provider since the early 1960s, Scopus databases was also launched to the Internet in 2004.

PubMed and Web of Science originate from the United States whereas Scopus originates from Europe. PubMed is a free and provide open access to all interested clinicians, researchers and trainees and also to the public in general. Scopus and Web of Science are databases that belong to commercial providers and require an access fee. Web of Science covers the oldest publications because its indexed and archived records go back to 1900. PubMed allows the larger number of keywords per search but is the only database of the four that does not provide citation analysis. Scopus includes articles published from 1966 on but information regarding citation analysis is available only for articles published after 1996. The Scopus database was developed by

Elsevier, combining the characteristics of both PubMed and Web of Science. These combined characteristics allow for enhanced utility, both for medical literature research and academic needs (Citation analysis), yet access to the database is not free although, reviewers for numerous Elsevier medical journals are entitled to 1 month of free use.

The search results in Scopus can be displayed as a listing of 20-200 items per page and documents can be saved to a list and/or can be exported, printed or e-mailed. The results can be refined by source title, researcher name, year of publication, document type and/or subject area and a new search can be initiated within the results. The presence of an abstract, references and free full text is noted under each article title in addition to where these can be found. When abstracts are displayed, the keywords are highlighted. The fields that can be included in the output are optional (citation information, bibliographical information, abstract and keywords). The citation analysis that scopus performs is presented as a Table with numbers of cited articles for individual years as well as the total number of cited references for all years. The articles cited can be accessed by simply clicking on the number of citations. In addition, Scopus has search tips written in 10 languages (Falagas *et al.*, 2008).

Web of Science was developed by Thomson Scientific a part of the Thomson Corporation, another private company and has dominated the field of academic reference, mainly through the annual release of the journal impact factor a tool for evaluating the importance and influence of specific publications. The impact factor has been highly criticized but remains the most widely used of the indexes available. It has a quick search (By entering a

topic) an advanced search, a general search and a cited reference search. In the cited reference search the search can be limited by cited author, cited work and cited years whereas the cited author index and the cited work index can be presented if the researcher requires it (Moed, 2009).

Obviously, the process of citation is a complex one and assessing research performance by citation analysis is a vulnerable method. Problems such as different motives for giving or not giving a reference to a particular publication, self-citations or differences in publication and citation practices among fields and subfields have all been clearly outlined. Despite these limitations, many studies have demonstrated that citation analysis provides useful information for research evaluation (Falagas *et al.*, 2008).

According to the importance of kinds of citation analysis and their impact on the scientific validity of resources was done the study of citation analysis of articles in Qazvin Faculty of Dentistry.

CONCLUSION

Citation analysis is an important factor in the evaluating of article and author currently. In this study researchers surveyed the effect of cited references for any articles in publishing that article in credible journals. It is concluded of evaluating findings that whatever citing to the core journals with higher and valid impact factor is more, the article will be more credible and the possibility of publishing in the same core journals will be more.

RECOMMENDATIONS

In this research the Citation Behavior of Articles in the Qazvin Faculty of Dentistry has been examined. But to achieve more accurate results of this factor effect in science production its offers that:

- The number of core journal in the dental school library should be increased
- This study should be done on a wider level as university
- Workshops should be held to writing scientific article

LIMITATIONS

The few number of faculty articles and inaccessibility to more core journals full text and consequently impossibility to use of them in papers were the some of the limitation in this study.

REFERENCES

- Bornmann, L., R. Mutz, C. Neuhaus and H.D. Daniel, 2008. Citation counts for research evaluation: Standards of good practice for analyzing bibliometric data and presenting and interpreting results. *Ethics Sci. Environ. Politics*, 8: 93-102.
- Chew, M., E.V. Villanueva and M.B. Van der Weyden, 2007. Life and times of the impact factor: Retrospective analysis of trends for seven medical journals (1994-2005) and their editors' views. *J. R. Soc. Med.*, 100: 142-150.
- Ciger, S., 2003. Impact factor, citation index and circulation. *Hellenic Orthodontic Rev.*, 6: 31-35.
- Craig, I.D., A.M. Plume, M.E. McVeigh, J. Pringle and M. Amin, 2007. Do open access articles have greater citation impact?: A critical review of the literature. *J. Inform.*, 1: 239-248.
- Falagas, M.E., E.I. Pitsouni, G.A. Malietzis and G. Pappas, 2008. Comparison of PubMed, scopus, web of science and google scholar: Strengths and weaknesses. *FASEB J.*, 22: 338-342.
- Greenwood, D.C., 2007. Reliability of journal impact factor rankings. *BMC Med. Res. Methodol.*, 7: 48-48.
- Huang, M.H. and C.S. Lin, 2011. A citation analysis of Western journals cited in Taiwan's library and information science and history research journals: From a research evaluation perspective. *J. Acad. Librarianship*, 37: 34-45.
- Khan, K.M. and H. Pradeep, 2009. Is impact factor true evaluation for ranking quality measure? *DESIDOC J. Library Inform. Technol.*, 29: 55-58.
- Moed, H.F., 2009. New developments in the use of citation analysis in research evaluation. *Arch. Immunol. Ther. Exp.*, 57: 13-18.
- Neuhaus, C. and H.D. Daniel, 2008. Data sources for performing citation analysis: An overview. *J. Documentation*, 64: 193-201.
- Noruzi, A., 2005. Google scholar: The new generation of citation indexes. *Libri*, 55: 170-180.
- Schloegl, C. and W.G. Stock, 2004. Impact and relevance of LIS journals: A scientometric analysis of international and german-language LIS journals-Citation analysis versus reader survey. *J. Am. Soc. Inform. Sci. Technol.*, 55: 1155-1168.
- Seglen, P.O., 1997. Citations and journal impact factors: Questionable indicators of research quality. *Allergy*, 52: 1050-1056.
- Singh, S. and R. Chaudhary, 2009. Accuracy of references cited in articles published in Indian journal of dermatology, venereology and leprology: A pilot study. *Indian J. Dermatol. Venereol. Leprol.*, 75: 488-491.