

Impact of online resources on medical research: A citation analysis of Pakistani medical journals

Saeed Ullah, Saeedullah Jan

Received:

11th January, 2019

Accepted:

13th August, 2019

Abstract

Objective: The objective of this study was to assess the impact of online resources on medical research, by measuring the extent to which they were being cited in the articles published in Pakistani medical journals.

Material and Methods: The references of articles published in selected sample of medical journals published during January 2018-December 2018 were examined.

Results: Total 301 articles were analyzed. Only 94 (31.23%) articles were found with online citations. 100 (33.22%) articles had cited web documents and 461 (153.16%) has cited the online journals.

Conclusion: The medical journals in Pakistan has a great tendency towards the process of migration to the Internet. We are in the transition period to use and accept the online resources in medical research.

Keywords: Citation analysis, online resources, medical writing, medical research.

Introduction:

Internet has converted the Physical world into a global village in this post-modern era. Access to information was made much faster due to online publishing. As medical research is directly linked with human health, so usability and accessibility of online medical resources is need of the day. Standard and authentic medical research resources are vital for the establishment of a healthy society. Tim Berners-Lee- an American computer expert designed internet for the first time in 1989 at European organization for Nuclear Research (CERN), Geneva.¹ The first peer reviewed, full text online journal was titled "The Online Journal of Current Clinical Trials (OJCCCT)". It was indexed in Index Medicus.² Online access to web resources is becoming an important tool for medical researchers and is to transform the delivery of medical information.³ Thus, Internet will become an universal source of medical information, which medical researchers cannot afford to overlook.⁴ Fifty Eight(58)

Higher Education Commission (HEC) and Pakistan Medical and Dental Council (PMDC) Pakistani medical journals are available online at present.⁵ Online medical journals are easy to access and increase the readership and citation rate.⁶ The aim of this study was to assess the impact of online resources on medical research in Pakistan, by measuring the extent to which they are being cited in the articles published in Pakistani medical journals. Cuncun Lu recently conducted citation analysis of online top-100 most cited publications concerning Network Pharmacology. It was noted that the total number of citations for the 100 cited papers ranged from 21 to 1,238, published in 53 journals, from 2005 to 2017.¹³

Material and Methods:

This study is based on Dr. Midrar Ullah study titled "Impact of Online Resources on Medical Research: A Citation Analysis of Pakistani Medical Journals"¹² The data for this study were

Postgraduate Medical
Institute Hayatabad,
Peshawar
S Ullah

Khushal Khan Khattak
University Karak
S Jan

Correspondence:
Saeed Ullah
Assistant Librarian
Postgraduate Medical
Institute (PGMI),
Hayatabad, Peshawar.
Phone:0300-5964649
E-mail: saeedbirqi@gmail.
com

Table-1:

S.No	Journal	Total article	Article with online citation	No. of cited online web docs	No. of cited online journals	No. of cited online others
01	Journal of Postgraduate Medical Institute (JPMI)	38	14 (36.84%)	10 (26.31%)	08 (21.05%)	05 (13.16%)
02	Pakistan Heart Journal (PHJ)	54	06 (11.11%)	06 (11.11%)	00	05 (9.26%)
03	Pakistan Journal of Surgery (PJS)	39	12 (30.77%)	10 (25.64%)	03 (7.69%)	07(17.95%)
04	Journal of Medical Science (JMS)	74	10 (13.51%)	25 (33.78%)	02 (2.70%)	08 (10.81%)
05	Journal of Khyber Medical University (JKMU)	37	37 (100%)	37 (100%)	445 (1202.7%)	02 (5.40%)
06	Khyber Journal of Medical Sciences (KJMS)	59	15 (25.42%)	12 (20.34%)	03 (5.08%)	07 (11.86%)
	Total	301	94 (31.23%)	100 (33.22%)	461 (153.16%)	34 (11.29)

drawn from the selected sample of 6 medical journals out of the peer-reviewed, internationally abstracted medical journals published in print well as online in Pakistan. The references of articles published in the medical journals during January 2018-December 2018 were examined. All the articles comprises of original articles, review article, case reports, and short communications and letters to the editors that included references were selected (Only editorial were excluded). The authors also retrieved some information about citation from the bibliometric study of Pakistan Heart journal,¹⁰ and Pakistan Journal of Surgery¹¹ for this study. The most recent four issues of quarterly journals were downloaded from their respective websites and their references were analyzed. The article cited at least one online resource, was counted towards articles with online citation. This study focused on following two questions: To what extent are medical researchers using online resources in their research? and what type of online resources is being used?

Result:

Out of total of 301 articles examined, 94(31.23%) were found with Internet citation. 100(33.22%) cited web documents (web pages, medical sites etc), 461(153.16%) have cited online journals, and 34 (11.29%) online others (reports, proceedings, thesis) (table-1).

Discussion:

Citation analysis has been used as one of the bibliometric tool in many research studies like Midrar Ullah (2006),¹² and Becker, Deborah A. Chiware, Elisha R.T.(2015)¹⁴ and Tarazona et al (2018)¹⁵. Harter and Kim carried out the ci-

tation analysis of 74 print and online Journals. It was revealed that 1.9% electronic resources and 0.2% e-journals were cited in the articles.² Zhang reported that 7.5% of the article included online resources in their references.⁷ An effort was made to analyze the 100 most cited papers in Irish Journal of Medical Sciences. It was reported that 140.59 is the average citation in 44 different medical journals. Majority of the contributors were from USA.¹⁶ Ibrahim and Saeed Ullah Jan carried out a study of same nature. It was recorded that the each article on average references 21-30 citations. Community medicine was the most popular medical specialty with 17,340 citations from journals. Aga Khan University Karachi was declared as the most productive medical institution in Pakistan.¹⁷ Philip M. Davis conducted citation analysis of 11 biological and medical journals from 2003 to 2007. It was reported that article citation has increased to 17% in the mentioned period.¹⁸

Herring showed that more than half of the articles (55.4%) in electronic journals included electronic resources in their references.⁸ These studies were not limited to medical journals; however, these show an increase in the impact of online resources on scholarly communication. One of the important finding of this citation study is that the citation styles of the most of online references are not according to the Vancouver style. Printed version of medical journals is not going to lose its importance still for many years in Pakistan. However in long run the online resources will significantly affect the medical research.⁹

Conclusion:

In conclusion, the medical journals in Pakistan are in the process of migration to the Internet and we are in the transition period to use and accept the online resources in medical research. An awareness of online resources can help us to improve the literature search activities.

Conflict of interest: None**Funding source:** None**Role and contribution of authors:**

Saeed Ullah, collected the data, referencs and did the initial writeup.

Dr. Saeedullah Jan, critically went through the article and mande the final changes.

References:

- Noruzi A. Introduction to webology. Webology [serial online] 2004 [cited 2006 Jun 6]; 1(1): 1 Available from: URL <http://www.webology.ir/2004/v1n1/at.html>.
- Harter SP, Kim HJ. Electronic journal and scholarly communication: a citation and reference study. Information Research [serial online] 1996 [cited 2006 Jun 6] Aug; 2(1). Available from: URL <http://informationr.net/ir/2-1/papers9a.html>.
- Goldwin JW, Benjamin I. Internet -based medical information: time to take charge. Ann Intern Med 1995 Jul [cited 2006 May 31]; 123(2): 152-3. Available from: URL <http://annals.org/cgi/content/full/123/2/152>.
- Li YC, Jian WS, Chiu WT. Curriculum for building medical resources on the Internet-experience in Taiwan. Int J Med Inform [serial online] 1999[cited 2006 Jun 6];5: 54: 137-143. Available from: URL <http://ph.tmu.edu.tw/wtchiu/Publications/Ref-PDF%5CInt%20J%20Med%20Inf54,%20137.pdf>.
- Higher Education Commission (HEC). <https://www.hec.gov.pk/english/services/faculty/journals/Documents/Sciences/Science-Journals/Health-Sciences-Journals.pdf> Retrieved on 22/11/2019
- Jafary MH, Jawaid SA. Online Edition of Journals: a great source of manuscript and potential regional cooperation. Pak J Med Sci 2006; 22(2): 107-109.
- Zhang, Y. The impact of Internet-based electronic resources on formal scholarly communication in the area of library and information Science: a citation analysis. Journal of Information Science 1998 Jul/Aug; 24(2): 241-54.
- Herring SD. Use of electronic resources in scholarly electronic journals: a citation analysis. College & Research Libraries [serial online] 2002 Jul [cited 2006 Jun 12]; 63(4). Available from: URL: <http://www.ala.org/ala/acrl/acrlpubs/crljournal/backissues2002b/july02/herring.pdf>
- Odlyzko A. The rapid evolution of scholarly communication. Learned publishing [serial online] 2002 Jan [cited 2006 Jun 12]; 15(1): 7-19. Available from: URL: <http://alpsp.publisher.ingentaconnect.com/content/alpsp/lp/2002/00000015/00000001>.
- Ullah, S., Jan, S. U., Rehman, H. U., Butt, N. I., Rauf, M. A., Shah, S., & Jan, M. Y. (2019). RESEARCH PRODUCTIVITY IN PAKISTAN HEART JOURNAL FROM 2005 TO 2018: A SCIENTOMETRIC STUDY. Pakistan Heart Journal, 52(2).
- Ullah, S., Ahmad, H. N., Jan, S. U., Jan, T., Shah, S., Butt, N. I., & Jan, M. Y. (2017). A statistical analysis of Pakistan Journal of Surgery: A bibliometric lens from 2007-2016. Pak J Surg, 33(2), 123-127.
- Ullah, M. (2006). Impact of online resources on medical research: A citation analysis of Pakistani medical journals. RMJ-Rawal Medical Journal, 73-74.
- Cuncun Lu, Zhitong Bing, Zhijiang Bi, Ming Liu, Tingting Lu, YangqinXun. Top-100 Most Cited Publications Concerning Network Pharmacology: A Bibliometric Analysis. Evidence-Based Complementary and Alternative Medicine, 2019. 7 pages <https://doi.org/10.1155/2019/1704816>
- Becker, Deborah A. Chiware, Elisha R.T. Citation Analysis of Masters' Theses and Doctoral Dissertations: Balancing Library Collections With Students' Research Information Needs. 2015. Journal of Academic Librarianship, DOI: 10.1016/j.acalib.2015.06.022
- Tarazona, Beatriz, Lucas-Dominguez, Rut, Paredes-Gallardo, Vanessa, Alonso-Arroyo, Adolfo, Vidal-Infer, Antonio. The 100 most-cited articles in orthodontics: A bibliometric study. Angle Orthodontist, 2018 DOI: 10.2319/012418-65.1
- Karydakos, PloutarchosGiakoumettis, Dimitrios and Themistocleous, Marios. The 100 most cited papers about pediatric traumatic brain injury: a bibliometric analysis. 2019. DOI:10.1007/s11845-019-02085-6
- Ibrahim M1; Saeed Ullah Jan. Bibliometric analysis of the Journal of Pakistan Medical Association form 2009 to 2013. J Pak Med Assoc. 2015 Sep;65(9):978-83.
- Philip M. Davis. Author-choice open-access publishing in the biological and medical literature: A citation analysis. Journal for the Association of Science and Information Technology. 2008. <https://doi.org/10.1002/asi.20965>