

How much progress has been made in journal metrics two years after the citation analysis of the *Korean Journal of Urology*?

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Purpose: In April 2013, the journal metrics of the *Korean Journal of Urology* (KJU) were reported. That report showed tremendous improvement from the point of view of journal metrics. Two years later, the same metrics were reanalyzed to determine the present position of the KJU among the international journals in the Web of Science.

Materials and Methods: I analyzed journal metrics of the KJU such as impact factor, total citations, and h-index by use of the same methods as in the previous report.

Results: Total citations in the Web of Science were 332 in 2012, 439 in 2013, and 578 in 2014. Manually calculated impact factors from 2012 to 2014 were 0.770, 0.824, and 0.751, respectively. There was an increase in the h-index from 8 in 2012 to 11 in February 2015. Editorial board members were from 15 countries in 2014. Authors of KJU articles were from 21 countries in 2014.

Conclusions: During 2 years, remarkable progress was made in KJU's citation indicators and in the diversity of the authors' and editorial board members' countries.

Keywords: Bibliometrics; Internet; Journal impact factor; Science

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INTRODUCTION

Two years ago, I analyzed the journal metrics of the *Korean Journal of Urology* (KJU). At that time, I manually calculated the 2012 Journal Citation Reports (JCR) impact factor ranking from the Web of Science, which corresponded to the upper 84.9%. The Hirsch index (h-index) from the Web of Science was 8 [1]. That retrospective study was conducted to determine if the strategy of changing the language of the KJU to exclusively English in 2010 was successful from the point of view of journal metrics. Two years have passed since the previous metrics analysis was done. Here, I would like to

verify how much progress has been made in journal metrics since the last citation analysis of KJU. The results of the present analysis will provide the journal with direction for recruiting high-quality submissions and will provide basic data for the future planning of journal promotion.

MATERIALS AND METHODS

This was a cross-sectional descriptive bibliometric study. In this follow-up study, the journal metrics of the KJU were analyzed from the Web of Science. The following journal metrics were analyzed in February 2015: total citations,

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impact factor, and h-index. The number of different countries of the authors publishing in KJU was compared between 2012 and 2014. The methods of calculation were the same as previously described [1]. The proportion of funded papers and the countries of the editorial board members were added in the present analysis. Finally, aims and scopes were compared between 2012 and 2014.

RESULTS

The number of total articles and citable articles in KJU from 2012 to 2014 is presented in Fig. 1. Total citations in the Web of Science were 332 in 2012, 439 in 2013, and 578 in 2014. Impact factors from 2012 to 2014 were 0.770, 0.824, and 0.751, respectively. The 2013 impact factor corresponds to the upper 81.8% in the *Urology and Nephrology* category if compared with the 2013 JCR. The score for the 2014 impact factor may be higher if it is checked again in April 2015, when more journal data are inputted for 2014 Web of Science journals. The h-index increased from 8 in 2012 to 11 in February 2015. The most frequently cited articles are listed in Table

1. Of the 15 most frequently cited articles, 12 were original research articles and 3 were review articles.

The authors in KJU were from 16 different countries in 2012 and from 21 different countries in 2014. The proportion of original articles that were funded was 0.8% in 2012,

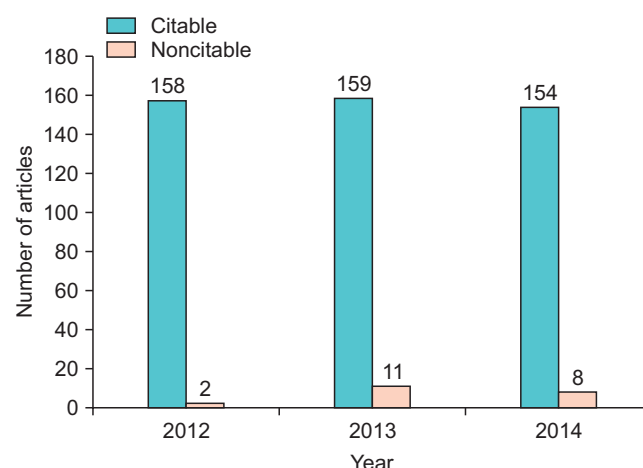


Fig. 1. Number of citable and noncitable articles of the *Korean Journal of Urology* from 2012 to 2014.

Table 1. Frequently cited articles to find Hirsch index of the *Korean Journal of Urology* from Web of Science [cited 2015 Feb 9]

| Ranking | Article title | Volume | Page | Year | Publication type | No. of cited |
|---------|---|--------|------|------|------------------|--------------|
| 1 | Laparoendoscopic single-site surgeries: a single-center experience of 171 consecutive cases | 52 | 31 | 2011 | Original article | 32 |
| 2 | Validation of an abridged Korean version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction | 42 | 535 | 2001 | Original article | 20 |
| 3 | Translation validity and reliability of I-PSS Korean version | 37 | 659 | 1996 | Original article | 20 |
| 4 | Relationship between the glutathione-S-transferase P1, M1, and T1 genotypes and prostate cancer risk in Korean Subjects | 52 | 247 | 2011 | Original article | 20 |
| 5 | Sunitinib malate synergistically potentiates anti-tumor effect of gemcitabine in human bladder cancer cells | 52 | 55 | 2011 | Original article | 16 |
| 6 | Predictive characteristics of malignant pheochromocytoma | 52 | 241 | 2011 | Original article | 15 |
| 7 | Dimethoxycurcumin, a structural analogue of curcumin, induces apoptosis in human renal carcinoma caki cells through the production of reactive oxygen species, the release of cytochrome C, and the activation of caspase-3 | 51 | 870 | 2010 | Original article | 14 |
| 8 | Correlation between chemokine receptor CXCR4 expression and prognostic factors in patients with prostate cancer | 52 | 607 | 2011 | Original article | 13 |
| 9 | Initial experience with laparoendoscopic single-site surgery by use of a homemade transumbilical port in urology | 51 | 613 | 2010 | Original article | 13 |
| 10 | Effect of obesity on prostate-specific antigen, prostate volume, and International Prostate Symptom Score in patients with benign prostatic hyperplasia | 52 | 401 | 2011 | Original article | 12 |
| 11 | Metabolomics: A novel approach to early and noninvasive prostate cancer detection | 52 | 79 | 2011 | Review article | 12 |
| 12 | Current status of targeted therapy for advanced renal cell carcinoma | 53 | 217 | 2012 | Review article | 11 |
| 13 | Transumbilical laparoendoscopic single-site ureterolithotomy for large impacted ureteral stones: initial experiences | 51 | 403 | 2010 | Original article | 11 |
| 14 | Toward evidence-based genetic research on lifelong premature ejaculation: a critical evaluation of methodology | 52 | 1 | 2011 | Review article | 11 |
| 15 | Does radical cystectomy improve overall survival in octogenarians with muscle-invasive bladder cancer? | 52 | 466 | 2011 | Original article | 11 |

0.9% in 2013, 7.1% in 2014, and 43.8% in the January and February issues of 2015. Editorial board members were from 7 countries in 2012 (Australia, Austria, China, Japan, Korea, Taiwan, and United States) and from 15 countries in 2014 (Australia, Austria, Canada, China, Hong Kong, India, Indonesia, Italy, Japan, Korea, Malaysia, Singapore, Taiwan, Turkey, United Kingdom, and United States). New scopes added in 2014 were genomics/stem cells in urology, urological oncology, laparoscopy/robotics, and new technology/lasers in urology.

DISCUSSION

Because the journal metrics from KoMCI (Korean Medical Citation Index) and SJR (SCImago Journal & Country Rank) are easily found and interpretable, I did not add those results [1]. Since KJU has not been indexed in the Web of Science through February 2015, it is necessary to analyze the metrics manually calculated from the Web of Science. Over the past 2 years, there has been remarkable progress in the citation indicators. Total citations in 2014 were 1.7 times the number of citations in 2012. The 2013 impact factor, which corresponded to the upper 81.8% of JCR ranking, was a meaningful increase. The increase in the h-index from 8 to 11 over 2 years is also astonishing progress, although the h-index usually increases every year because it is a cumulative value. Interestingly, the publication types of the 15 articles frequently cited equal to or greater than 11 times were original articles (12) and review articles (3). In other journals, the publication type of highly cited articles tends to be review article. For example, of 13 highly cited articles in *Diabetes & Metabolism Journal*, 10 articles were review articles [2]. Of seven highly cited articles in *Clinical and Experimental Reproductive Medicine*, five articles were review articles [3]. This discrepancy may arise from the fact that the original articles in KJU focused on emerging fields such as laparoendoscopy.

The increase in the number of countries of the authors from 16 to 21 reflects that the KJU is already an internationally well-known journal. The proportion of original articles that were funded increased since 2012. In 2015, there may be at least 40% funded articles among the original ones, because the proportion of funded articles in the January and February issues was 43.8%. It is believed that funded articles have already passed one level of peer review in order to acquire research funds. Also, the amount of the budget may support a better quality of work. It is the editors' task to recruit funded research results as much as possible and review them. The number of countries of the editors

increased in 2014 to more than two times the number in 2012. Diversity in editors' countries is believed to contribute to diversity in authors' countries. New scopes in 2014 such as genomics/stem cell, uro-oncology, and robotic surgery will be prominent characteristics of the KJU that will allow it to compete with other international journals.

There was a comparable 2-year follow-up study of journal metrics for the *Korean Journal of Internal Medicine* from 2011 to 2013 [4,5]. For that journal, the impact factor increased from 0.623 to 1.252 and the h-index increased from 14 to 15. From these data, it can be seen that a rapid increase in the h-index is difficult as the value increases. The increase in the KJU h-index from 8 to 11 was possible because of an h-index below 10 in 2012.

In Korea, journal metrics are of concern to editors because these are among the important selection criteria for international citation databases [6]. Especially, a new journal title likes to know the journal's position in the journal markets through journal metrics [7]. This remarkable progress in KJU journal metrics has been accelerated since the journal's inclusion in PubMed Central (PMC)/PubMed from April 2010. This inclusion was possible after the change to English language only from the January issue of 2010. The production of PMC extensible markup language (XML), now also called Journal Article Tag Suite (JATS) XML, of an English-language journal is a basic requirement to be a PMC journal [8,9]. In Korea, the production of JATS XML is possible through several publishing companies or information technology companies. Increased citation usually originates not from open access itself but also from the journal platform [10]. Since PMC/PubMed is the most important platform for medical literature searches, all editors of Korean medical journals published in English tried to add their journals to this platform and succeeded in increasing their journals' impact factors enough to be indexed in the international databases [11,12]. Furthermore, being indexed in MEDLINE in July 2014 has given the KJU a greater chance of being cited owing to the addition of MeSH (medical subject headings) to KJU articles in PubMed.

The Editor of KJU has immediately and continuously adopted recent information technology introduced for scholarly journals, such as DOI (digital object identifier) [13], CrossMark, FundRef [14], QR (quick response) code [15], ORCID (open researchers and contributors ID) [16], video clips, mobile web, social networking services, and YouTube. Such efforts are the most powerful tool for disseminating invaluable information in the Internet age beside the journal platform. Introduction of TDM (text and data

mining) in the near future will also enhance the citation of KJU [17]. The promotion of the journal metrics for the KJU over the past 2 years was possible as a result of the editor's and editorial board members' enthusiasm, sacrifice, and devotion to KJU [18].

CONCLUSIONS

Two years after the first report on journal metrics of KJU, remarkable progress has been made in total citations, impact factor, and the h-index manually calculated from the Web of Science. Also, the countries of the authors and editorial board members became more diverse. This means that the journal's territory expanded to the world. Introduction of new scopes such as genomics/stem cells, robotics, and uro-oncology will be a mainstay for journal development.

CONFLICTS OF INTEREST

The author has nothing to disclose.

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