

Original Article



Journal Metrics of *Infection & Chemotherapy* and Current Scholarly Journal Publication Issues

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Conflict of Interest

No conflicts of interest.

ABSTRACT

Background: In 2013, *Infection & Chemotherapy* changed the main language of its articles to English so that they could be submitted to PubMed Central. This study presents the recent status of journal metrics for *Infection & Chemotherapy* and introduces scholarly journal publishing policies or guidelines that have recently appeared.

Materials and Methods: A variety of journal metrics were analyzed based on the Web of Science Core Collection, including the nationality of authors the proportion of funded articles to original articles, manually calculated impact factor, the titles of journals in which articles were cited”, and the Hirsch index.

Results: Out of 181 articles of *Infection & Chemotherapy* published between 2015 and 2018, the highest number of authors were from Korea (165, 91.2%). There were articles from 11 other countries. The proportion of funded articles to original articles has increased yearly and has reached 46.7% in 2018. The manually calculated impact factor of the year 2017 was 1.728, which corresponded to 21.5% of the 2017 Journal Citation Reports (JCR) category of “infectious diseases”. There were 196 source journal titles that cited *Infection & Chemotherapy* in the 2015–2018 issues. The Hirsch index was 15.

Conclusion: The metrics results above demonstrate that over the years, *Infection & Chemotherapy* was developed into a top-level international-level journal so that it could be utilized by researchers across the world. The adoption of new policies including author taxonomy, an open data policy, a clinical data sharing policy, the principles of transparency and best practice in scholarly publishing 3rd edition will help increase the transparency of the authorship and the scientific integrity of the articles.

Keywords: Information dissemination; Journal impact factor; Language; Republic of Korea; Scholarly communication

INTRODUCTION

Infection & Chemotherapy (ISSN: 2093-2340) is the official journal of both the Korean Society of Infectious Diseases and the Korean Society for Chemotherapy. It has been a continuation of the journal *Kamyŏmgwa hwahak yopŏp* (ISSN: 1598-8112), which started in 2003 and ended in 2009, *Infection & Chemotherapy* is the result of a merge between *Taehan Hwahak Yopŏp Hakhoe chi* (= *The Journal of the Korean Society for Chemotherapy*, ISSN: 1225-7850) which started

in 1983 and ended in 2002 and *Kamyöm* (= *Korean Journal of Infectious Diseases*, ISSN: 0368-6221) which started in 1969 and ended in 2002. *Infection & Chemotherapy* is the typical model in Korea for a merger between two society journals. It changed the main language of its articles into English from 2013 onwards so that they could be submitted to PubMed Central after the production of full-text JATS XML files [1]. Furthermore, it is searchable from PubMed. Its content has been also searchable from the Web of Science Core Collection in the Emerging Sources Citation Index database since its 2015 issues and from Scopus since its 2011 issues. Therefore, one can rightly claim that it is an international journal. I would like to present the recent status of journal metrics for *Infection & Chemotherapy* to confirm its present position as an international journal, and furthermore, to introduce the recent publishing policies or guidelines to better transparency of authorship and scientific integrity.

MATERIALS AND METHODS

As for journal metrics, the following will be analyzed from the Web of Science Core Collection: the number of citable and non-citable articles, the nationality of authors, the nationality of editorial board members, the proportion of funded articles to original articles, total citations, the manually calculated impact factor [2], the authors' countries and source title of the articles which cited *Infection & Chemotherapy*, and the Hirsch index [3]. The definition of the impact factor is given as the “impact factor of the journal J in the year X = A/B, where A is the number of total citations in the year X received by all items published in the journal J in the years (X-1) and (X-2) and B is the total number of all citable items published in the journal J in the years (X-1) and (X-2). Citable items include only papers and reviews and do not include errata, editorials, and abstracts. In the counting of A, however, citations to all items published in J are included” [2]. The Hirsch index is defined as “the number of papers with citation number $\geq h$, and it has index h if h of its N_p papers have at least h citations each, and the other (N_p-h) papers have $\leq h$ citations each” [3].

Recent policy or standards that were introduced included author taxonomy, an open data policy, a clinical data sharing policy, and the “principles of transparency and best practice in scholarly publishing 3rd edition”.

RESULTS

1. Journal metrics

The number of citable and non-citable articles is presented in **Fig. 1**. Out of 181 articles, the highest number of authors are from Korea (165, 91.2%). There are articles from 11 other countries (**Fig. 2**). Out of 51 editorial board members, 30 members are from Korea (**Fig. 3**). 21 members are from 16 other countries. The proportion of funded articles to original articles has increased yearly to reach 46.7% in 2018 (**Fig. 4**). Total citations increased yearly (**Fig. 5**). The number of citable articles from 2015 to 2016 was 81 and the number of citations in 2017 in the articles published between 2015 and 2016 was 140. Therefore, the manually calculated impact factor of 2017 was 1.728 (140/81). The number of countries that cited articles of the 2015–2018 issues of *Infection & Chemotherapy* was 60. Korea, the United States of America, and China were the top 3 countries that cited the journal (**Fig. 6**). The 196 source journal titles that cited the 2015–2018 issues of *Infection & Chemotherapy* are presented in **Fig. 7**. Out of 346 citing articles, 49 (14.2%) were from *Infection & Chemotherapy*. The Hirsch index can be obtained from **Table 1**

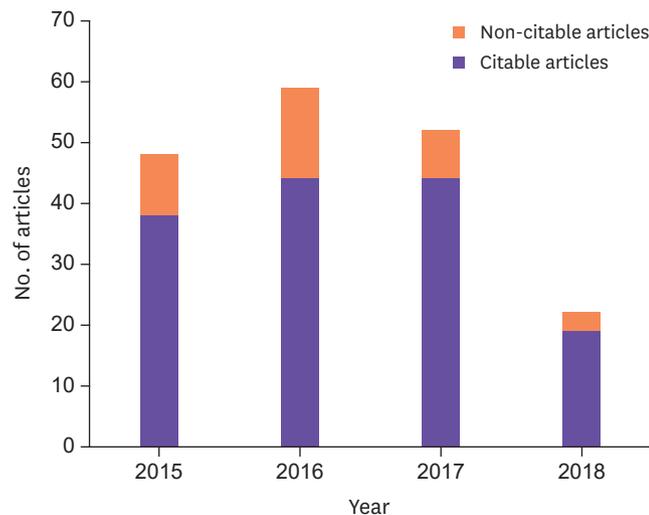


Figure 1. Number of citable and non-citable articles of *Infection & Chemotherapy* from 2015 to June 2015.

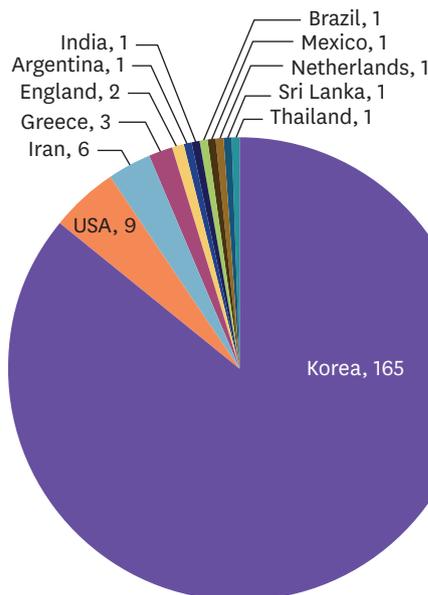


Figure 2. The countries of authors who published in *Infection & Chemotherapy* from 2015 to 2018.

which shows the most frequently cited articles published from 2003. A total of 582 articles had been cited in the Web of Science Core Collection. The Hirsch index is 15 (Table 1).

2. New policies or guidelines

1) Author (contributor) taxonomy

In 2012, a group of journal editors met under the support of Harvard University and Wellcome Trust. They discussed the descriptions of each author's role in the list of authors. *Nature* published a commentary on author taxonomy in 2014 which mentioned that “through the endorsement of individuals' contributions, researchers can start to move beyond ‘authorship’ as the dominant measure of esteem” [4]. Since 2014, author taxonomy – otherwise known as CRediT (Contributor Roles Taxonomy) – started to be adopted by journal editors and publishers. The authors' role was classified into 14 categories from conceptualization to

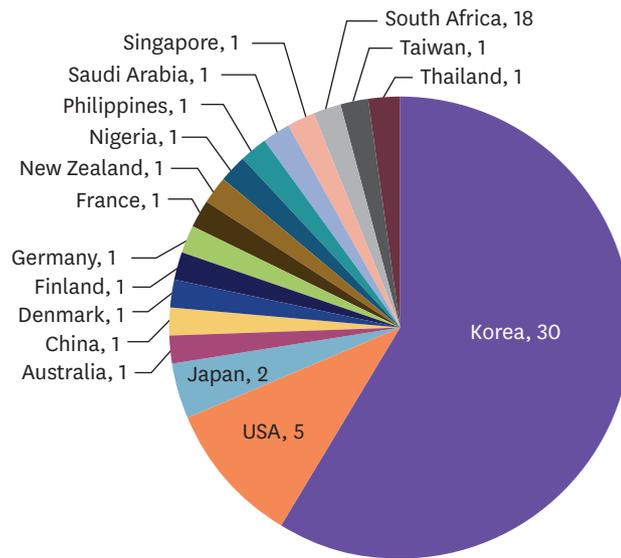


Figure 3. Countries of editorial board members of *Infection & Chemotherapy* in 2018.

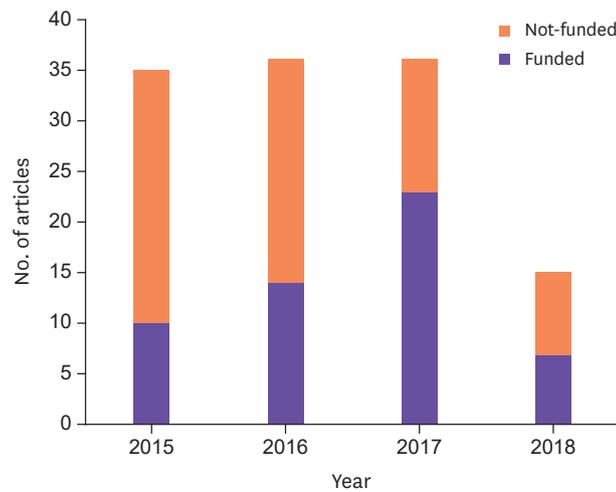


Figure 4. The number of funded and non-funded articles out of original articles in *Infection & Chemotherapy*.

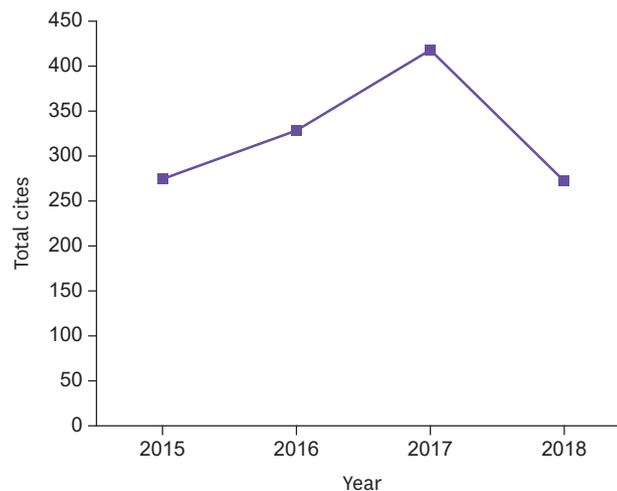


Figure 5. Total citations of *Infection & Chemotherapy* in the Web of Science Core Collection [cited 2018 Aug 6].

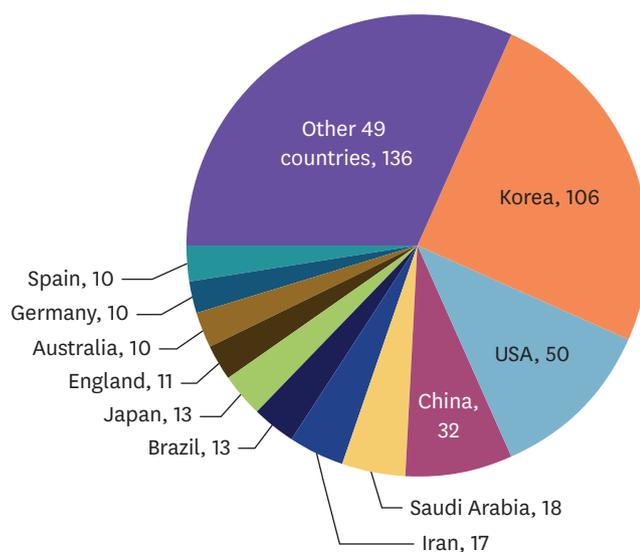


Figure 6. The countries of authors who cited the 2015–2016 issues of *Infection & Chemotherapy* in Web of Science Core Collection [cited 2018 Aug 6].

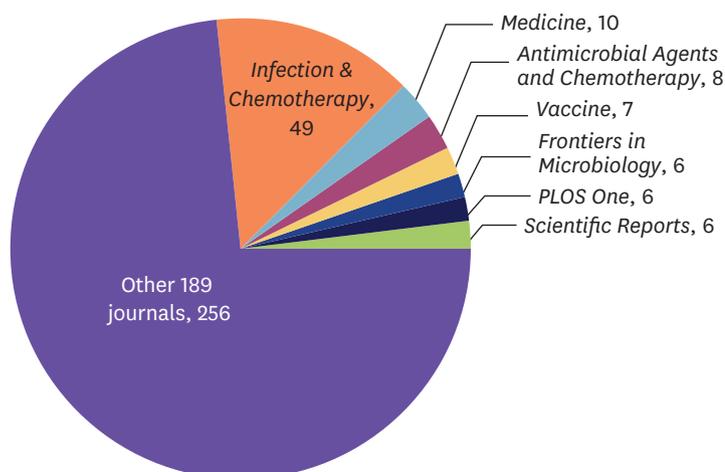


Figure 7. Source journal titles that cited the 2015–2018 issues of *Infection & Chemotherapy* in Web of Science Core Collection [cited 2018 Aug 6].

writing-review and editing; these categories are available at: <https://casrai.org/credit/>. In Korea, a number of journals including the *Journal of Educational Evaluation for Health Professions* began to adopt author taxonomy in 2017 [5]. An example is as follows:

Authors' contributions

Conceptualization: SH. Data curation: MKY. Formal analysis: EYL. Funding acquisition: SH. Methodology: EYL MKY SH. Project administration: SH. Visualization: EYL MKY SH. Writing - original draft: EYL. Writing - review & editing: EYL MKY SH.

This kind of description may be able to reduce disputes over authorship and give specific credit to each author. It is not necessary to adopt or describe all 14 categories. The range of description is dependent on the specific characteristics of the articles.

Table 1. Most frequently cited articles of *Infection & Chemotherapy* out of 582 cited articles from 2003

Rank	Authors' country	Title	Year	Vol	Page	Publication type	Times cited
1	USA	Cytomegalovirus Infections in Solid Organ Transplantation: A Review	2013	45	260	Review	68
2	Korea	Praziquantel Treatment in Trematode and Cestode Infections: An Update	2013	45	32	Review	51
3	Korea	Antimicrobial Resistance in Asia: Current Epidemiology and Clinical Implications	2013	45	22	Review	50
4	Korea	Biomarkers of Sepsis	2014	46	1	Review	43
5	Japan	Genomic Basis for Methicillin Resistance in <i>Staphylococcus aureus</i>	2013	45	117	Review	38
6	Korea	Epidemiology and Characteristics of Metallo- β -Lactamase-Producing <i>Pseudomonas aeruginosa</i>	2015	47	81	Review	35
7	Korea	Therapy of Infections due to Carbapenem-Resistant Gram-Negative Pathogens	2014	46	149	Review	31
8	Korea	Diagnosis of Pneumococcal Pneumonia: Current Pitfalls and the Way Forward	2013	45	351	Review	30
9	Korea	Epidemiology and Clinical Features of Post-Transplant Bloodstream Infection: An Analysis of 222 Consecutive Liver Transplant Recipients	2013	45	315	Original article	28
10	USA	Fluad [®] -MF59 [®] -Adjuvanted Influenza Vaccine in Older Adults	2013	45	159	Review	21
11	Korea	Increase in the Prevalence of Carbapenem-Resistant Acinetobacter Isolates and Ampicillin-Resistant Non-Typhoidal <i>Salmonella</i> Species in Korea: A KONSAR Study Conducted in 2011	2014	46	84	Original article	19
12	USA, Korea	Clinical Importance and Epidemiology of Quinolone Resistance	2014	46	226	Review	18
13	Korea	Epidemiology and Clinical Features of Bloodstream Infections in Hematology Wards: One Year Experience at the Catholic Blood and Marrow Transplantation Center	2013	45	51	Original article	18
14	UK	Revolutionising Bacteriology to Improve Treatment Outcomes and Antibiotic Stewardship	2013	45	1	Review	18
15	Korea	Blood Stream Infections in Patients in the Burn Intensive Care Unit	2013	45	194	Review	15

2) Open data policy

It was originally designed for the transparent presentation of public data supported or generated by the government. Therefore, it is also called “open public sector information” [6]. It was first initiated by the United States of America and the European Union governments. The Korea government also adopted the open data policy for the databases generated by the government's budget after enacting the law “ACT ON PROMOTION OF THE PROVISION AND USE OF PUBLIC DATA” in November 19 2014, available at: https://elaw.klri.re.kr/kor_service/lawView.do?hseq=47133&lang=ENG. Recently, this concept was introduced to scholarly journal publishing. At the 13th European Association of Science Editors' conference in Strasbourg, France in 2016, Lex M. Bouter proposed “increasing transparency with open data policies and modifications of the reward system for researchers in order to prevent questionable research practices or sloppy science” [7]. In Korea, the *Journal of Educational Evaluation for Health Professions* is a pioneer in its adoption of the open data policy in March 2016 [8]. The open data policy was already introduced in the field of biomedical information; therefore, to publish articles on genes or proteins, researchers should deposit their data to GenBank or other related banks managed by the United States National Center for Biotechnology Information. These data can thus be used for review and further analysis by researchers in the same field. Depositing data and opening them up to other researchers can provide three benefits. First, scientific soundness can be guaranteed. If raw data are opened to reviewers and readers, the analysis of data can be repeated with the same methods more easily. Second, there is a possibility of developing new ideas through raw data; furthermore, this can initiate more advanced research in the same field. Third, raw data can facilitate meta-analysis or high quality systemic reviews through analysis. I am not sure to what extent raw data may be used by researchers because these three benefits are still under speculation. If a journal editor or publisher decides to adopt the open data policy, the depository of data is necessary. Currently, Harvard Dataverse is the first option

for society journals [9]. Until August 4 2018, 76 journals have made their own space for data deposition (<https://dataverse.harvard.edu/dataverse/harvard>). There is no fee to deposit data. Figshare (<https://figshare.com/>) is the other option for data deposition; however, it is not free.

3) ICMJE's data sharing statement policy

It is an open data policy. It was recommended by the *International Committee of Medical Journal Editors* (ICMJE); therefore, all journal editors and publishers who state that they follow the ICMJE recommendations should follow this policy. From July 1 2018, manuscripts of clinical trials must announce a data-sharing statement. Editors should add this policy to their instructions to authors. There are options to specify the degree of data sharing statements by authors; therefore, authors can choose from the available options in the examples of data sharing statements which are available from this policy editorial [10].

4) Principles of transparency and best practice in scholarly publishing 3rd ed.

This guideline was recently revised in January 2018. Therefore, there are few scholarly journals that adopt this guideline [11]. It is composed of 16 items. Out of 10 scholarly journals published by Trakya University in Turkey, items of marketing, intellectual property, and data sharing were omitted [12]. In Korea, there is still no survey on the compliance of these 16 items to scholarly journals. **Table 2** summarizes the 16 items. It is also mandatory to fulfill these 16 items before applying to be indexed in MEDLINE [13].

Table 2. Compliance of a medical journal to the *Principles of Transparency and Best Practice in Scholarly Publishing* (joint statement by COPE, DOAJ, WAME, and OASPA; (<http://doaj.org/bestpractice>))

No.	Item	Sub-items
1	Website	Aims & scope Readership Authorship criteria ISSN
2	Name of journal	
3	Peer review process	Statement of review process Method of peer review
4	Ownership and management	
5	Governing body	Editorial boards
6	Editorial team/contact information	
7	Copyright and licensing	
8	Author fees	
9	Process for identification of and dealing with allegations of research misconduct	Step to prevent research misconduct COPE's guideline
10	Publication ethics	Authorship and contributorship Complaints and appeal Conflicts of interest Data sharing and reproducibility Ethical oversight Intellectual property Post-publication discussions
11	Publishing schedule	
12	Access	
13	Archiving	
14	Revenue sources	
15	Advertising	
16	Direct marketing	

COPE, committee on publication ethics; DOAJ, directory of open access journals; WAME, world association of medical editors; OASPA, open access scholarly publishers association.

DISCUSSION

The metrics results above demonstrate the following. First, although Korean authors are dominant, *Infection & Chemotherapy* has been cited by 60 countries all over the world in 196 journals. Second, the proportion of funded articles has increased yearly. Third, citation has increased yearly and the recent impact factor corresponded to 21.5% of the Journal Citation Reports (JCR) category of infection. Fourth, review articles have been cited more frequently than original articles;

In fact, review articles have been cited more frequently than any other publication types in other journals in Korea, such as *Clinical and Molecular Hepatology* [14], *Clinical and Experimental Vaccine Research* [15], *Annals of Pediatric Endocrinology & Metabolism* [16], *Intestinal Research* [17], and *Neurointervention* [18]. Exceptions were present: *Clinics in Orthopedic Surgery*, where all of the 15 highly-cited articles were original articles, except one [19], and *Blood Research* [20], where out of 10 highly-cited articles, half the type of publication were review articles while the other half were original articles. These phenomena may be dependent on editors' decisions on how to recruit the invited review articles and from whom the review articles were submitted. In *Infection & Chemotherapy*, Korean authors' review articles formed a major portion of all the highly-cited articles.

In conclusion, the metrics results tell us the present position of the journal in the international scholarly journal market. This was made possible by the authors' contribution which were mainly from society members, the editors' ceaseless devotion, and the publishing society's full support. One of the journal's present tasks is to recruit more invaluable manuscripts from outside Korea for a multinational authorship. The recent publication policies mentioned above are not difficult for editors to adopt or to describe more lucidly, which will be able to promote the transparency of authorship and the scientific integrity of the articles to the highest level.

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