

Bibliometric analysis of Asian Pacific Journal of Tropical Medicine from 2008 to 2019

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ABSTRACT

The purpose of the study is to assess the scientific research productions in Asian Pacific Journal of Tropical Medicine (APJTM) from its first issue up to Dec 2019. We used the Web of Science Core Collection (SCI-EXPANDED, SSCI) to extract the relevant documents. Additionally, the data analysis using ORIGIN PRO 2018, HistCite, bibliometrix R-package, and VOSviewer. Var1.6.6. A total of 2,137 publications of APJTM. A total of 2,136 documents were retrieved, with received 13956 citations, with an average mean 6.63 citations per article, an h-index of 38. The most frequently occurring keywords in this analysis were Malaria, dengue, apoptosis, antioxidant, rate, invasion and anopheles stephensi and inflammation. The study provided the comprehensive and general overview for APJTM journal over its history from the first issue up-to-date. Moreover, the findings provide an insight into the frequency of citations for top-cited articles published in APJTM as well as the quality of the works, journals, trends of publications steering in APJTM.

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1. INTRODUCTION

The Journal of Asian Pacific Journal of Tropical Medicine (APJTM) is a leading international journal in the field of public, environmental and occupational health and tropical medicine created in 1993. The journal is indexed in the DOAJ, EMBASE/ Excerpta Medica, Index Copernicus, Science Citation Index Expanded, SCOPUS, and journal citation reports of the web of science; in 2018 edition, it has an impact factor of 1.772. In 2008, it began as a quarterly journal, and in 2009, it became a bimonthly journal. Undoubtedly, the inclusion of any journal into public reported data databases increases exponentially the citation rate and the published documents were being visible to a wide-ranging audience as previously reported in other medical journal [1, 2].

The APJTM International Standard Serial Number (ISSN) 1955-7645. Sponsored by Institute of Tropical Disease, Hainan Medical University, China. The APJTM is devoted to the academic publications, communicating platform for international doctors, medical scientists, allied health scientists, public health employees, particularly those of the Asia-Pacific area and throughout the world. Provides extraordinary contribution in the field of scientific research production and set up an academic communication platform for Chinese and the rest of the world precisely in tropical medicine and other related fields as open access

journal, when it began to publish and its first issues published in January 25, 2018, till transferred back to the society in 2018. Throughout the monthly peer-reviewing process. Accordingly, in 2019, APJTM became 11 years old. Moreover, the scientific research production of APJTM in this field and publication output is unknown. Motivated by this event of continuously producing articles in the field of tropical medicine, in the whole country, and worldwide.

Therefore, for better understanding of the growth and development of the journal, bibliometric studies have been a massively useful tool to the academic community in identifying most productive authors and potential publications. Furthermore, it helps scientist in determining the highly cited documents, leading authors, geographical distribution, countries or academic institutions, funding agency, and other significant details of any specific literature [3]. Hence, the APJTM being indexed in WOS databases in 2008. Then, it is essential to conduct a bibliometric study to provide a better understanding of the journal aspect and provides insight into overview that goes far beyond the scope of APJTM during the past years.

2. RESEARCH METHOD

2.1. Study design and data search

The documents published in APJTM were identified using the advanced search option. The articles published from 2008 till Dec 2019. The following terms were searched: Publication name: ("Asian Pacific Journal of Tropical Medicine") In Expanded (SCI-EXPANDED) and Social Sciences Citation Index (SSCI) using the applications "Web of Science" (WOS) databases (Clarivate Analytics, USA) to achieve the purpose of this study. The search was performed on 3rd Feb 2020 for articles published from 2008-2019.

2.2. Inclusion criteria

All document types, including articles, reviews, editorial materials, meeting abstract, and letter to the editor written and published in English up until the end of 2019 were included. Ethical approval was not required in this study because no human subjects were involved in this study.

2.3. Data extraction

Initially, the search strategies filtering resulted in 2,137 documents in WOS form APJTM. All the information was exported in CSV and plain text format for further analysis.

2.4. Bibliometric indicators

The paper covers the bibliometric analyses presenting the year-wise distribution of published documents, category-wise distribution of type of documents, Institutions or countries-wise distribution of contributions, prolific authors, authors affiliations, author keywords, article citation frequency reports, international collaborations, and geographical distribution of the publications.

2.5. Statistical analysis

All data were analyzed using ORIGIN PRO 2018, HistCite™ [4], and VOSviewer.Var1.6.6 (Leiden University, Leiden, The Netherlands) [5]. The program is freely available at (www.vosviewer.com) was used to construct the collaborative networks analysis between the authors and frequently occurring authors' keywords or countries by using bibliometric analysis [6].

3. RESULTS AND DISCUSSIONS

3.1. Types of retrieved documents

A total of 2137 documents were retrieved, with 13951 total global citations. The highest number of retrieved documents in APJTM were research articles (n=1,912; 89.5%), and review articles (129; 6%). Other types of retrieved documents include editorial material (n=42; 2%), meeting abstract, (n=36; 1.7%), and letter (n=17; 0.0%). Table 1 presents the type of retrieved documents.

3.2. Annual publications

The number of publications remained close to 50-100 between 2008 and 2009. The growth in publications was reached more than 200 in the year 2010, 2011, 2014, and 2016. The maximum number of publications was 294 publications recorded in 2014 as shown in Figure 1.

Table 1. Type of retrieved documents (N=2,136)

Type of document	Recs	Percent	TGCS
Article	1912	89.5	12529
Review	129	6.0	1244
Editorial material	42	2.0	71
Meeting abstract	36	1.7	2
Letter	17	0.	105

TGCS: Total global citations score

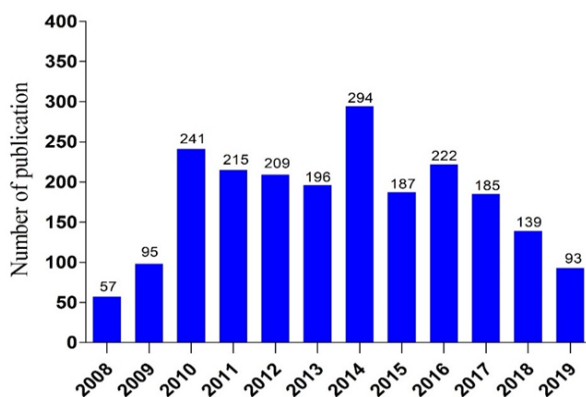


Figure 1. Annual publications in APJTM during 2008-2019

3.3. Annual citations

The retrieved documents received 13956 citations and had an average h-index of 38, an average of citation per documents 6.53, excluding self-citations. Meanwhile, the peak of the total cited document increased in the year 2010-2016, and the most times cited per paper is (2466) in the year 2011. Figure 2 shows the annual distribution of total cited documents and average citation score.

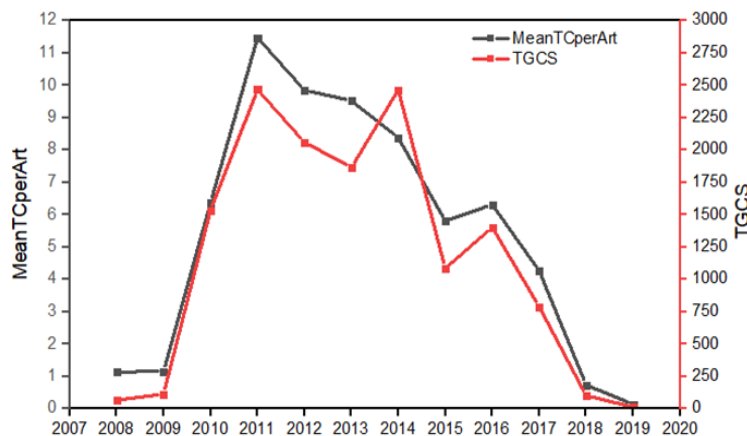


Figure 2. Annual distribution of total cited documents and average cited document per article in n APJTM

3.4. Most productive institutions and countries

The results of analysis revealed that Hainan Medical University in China turned out as the top productive institution contributed by the results of the analysis (n=78; 3.7%), with 237 cited score, followed by other institutions from Tehran University of Medical Sciences in Iran (n=47; 2.2%), with 425 cited score. A closer look at Table 2 revealed that the top 10 most productive countries from retrieved documents including China had greatest number of documents (n=615; 28.8%), followed by India (n=487; 22.8%), Nigeria (n=168; 7.9%), and Iran (n=148; 6.9%). Table 2 presents the top ten cited institutions and countries published paper in APJTM.

Table 2. Top ten cited institutions and countries that published papers in APJTM

Institutions	N (%)	TGCS (R)	Country	N (%)	TGCS
Hainan Medical University	78 (3.7)	237 (3)	China	615 (28.8)	2981 (2)
Tehran University of Medical Sciences	47 (2.2)	425 (2)	India	487 (22.8)	4673 (1)
University of Nigeria	37 (1.7)	191 (5)	Nigeria	168 (7.9)	666 (4)
Hainan Medical College	35 (1.6)	117 (8)	Iran	148 (6.9)	1343 (3)
Mahidol University	35 (1.6)	228 (4)	Thailand	103 (4.8)	607 (5)
Zhengzhou University	33 (1.5)	147 (6)	Malaysia	81 (3.8)	575 (6)
Annamalai University	32 (1.5)	623 (1)	Egypt	66 (3.1)	398(8)
Central South University	28 (1.3)	113 (9)	Pakistan	62 (2.9)	426 (7)
National research Center	26 (1.2)	131 (7)	USA	57 (2.7)	191(10)
University of Port Harcourt	23 (1.1)	55 (10)	South Korea	46 (2.2)	408 (9)

TGCS: Total global cited score

3.5. Top-10 authors' analysis

Our study showed that the most top-10 active authors contributing documents in APJTM were in China in addition to authors in Australia, India and Iran. Of top 10 most prolific authors, are professor Wiwanitkit V, from Hainan Medical University, Hainan, China 20 (0.9%), followed by Professor Chen J from the Shihezi University College of Animal Science and Technol, Xinjiang, China 15(0.7%). Table 3 shows the result of the top 10 prolific authors contributing document to APJTM.

Table 3. Top 10 prolific authors contributing documents to APJTM

Rank	Author	Number of articles (%)	Number of Times Cited (R)	Average citations per item (R)	h-index (R)	Affiliation (Institution, Country)
1	Wiwanitkit V	20 (0.9)	105 (3)	5.25 (8)	4 (5)	Hainan Medical University, Hainan, China
2	Chen J	15 (0.7)	65 (10)	4.33 (10)	5 (4)	Shihezi University College of Animal Science and Technol, Xinjiang, China
3	Zhang L	15 (0.7)	102 (4)	6.8 (5)	5 (4)	Western Sydney University School Science and Health Penrith, NSW, Australia
4	Li Y	14 (0.7)	81 (7)	5.79 (7)	6 (3)	University of Southern Queensland, Faculty of Health Engineering and Science, Toowoomba, QLD, Australia
5	Liu Y	14 (0.7)	72 (8)	5.14 (9)	5 (4)	Sichuan University College Life Science Chengdu, Sichuan, China
6	Zhang Y	14 (0.7)	68 (9)	4.86 (6)	6 (3)	Nanjing Chest Hosp Nanjing, Jiangsu, China
7	Chandra G	11 (0.5)	81 (6)	7.36 (4)	7 (2)	University of Burdwan Dept Zool Burdwan, W BENGAL, India
8	Bahmani M	10 (0.5)	368 (1)	36.8 (1)	9 (1)	Ilam University Medical Science, Biotechnology and Med Plants Research Centr, Ilam, Iran
9	Chen Y	10 (0.5)	106 (2)	10.6 (2)	5 (4)	Sichuan University West China University Hospital 2, Chengdu, China
10	Hassan V	10 (0.5)	92 (5)	9.2 (3)	6 (3)	Tehran University of Medical Sciences School of Public Health, Tehran, Iran

R: Rank

3.6. Top ten cited articles

The top 10 documents in APJTM and their citation frequency and the average of cited documents are listed in table [7-16]. Singh N et al. wrote the most high-ranking article in the journal, with two hundred and thirteen citations for the article entitled "Leishmaniasis: Current status of available drugs and new potential drug targets" [7], followed by paper authored by DebMandal M. with one hundred and forty-two citation [8], and Gnanadesigan M, et al. with eighty-four citations score [9]. The top cited documents are shown in Table 4.

3.7. Co-author network collaboration and countries

Figure 3 present the collaboration network of the documents published by APJTM during the period 2008-2019. Node size is proportional to the number of documents published by each country. Likewise, lines thickness of the link between any two countries is revealing the extent of co-authorships (collaboration), respectively. Undoubtedly, the international researchers who collaborated with people republic of China researchers were from India, Nigeria, Egypt, and the United States.

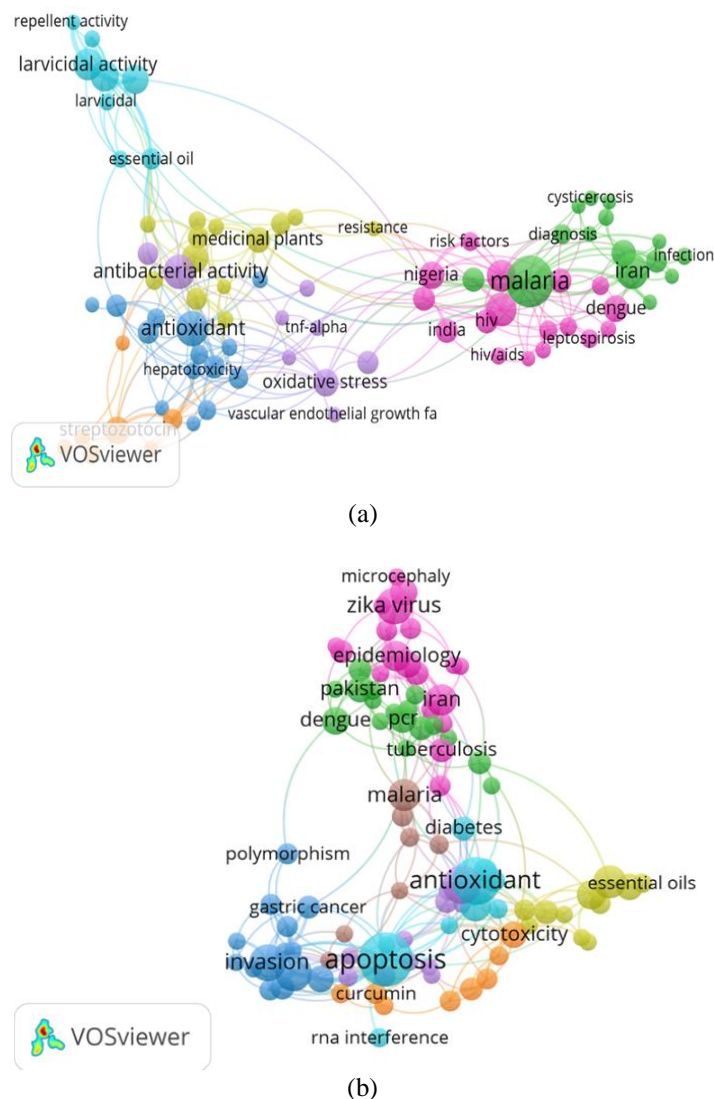


Figure 4. Word co-occurrence network built using words of (a) documents published between 2008-2013
(b) documents published between 2014-2019

3.9. Visualization of co-authorship and authors

Co-authorship among authors in APJTM research depicted using a network visualization map, our analysis shows among 8392 co-authorship and authors document, a minimum three authors were selected, and 380 met the threshold were visualized in 6 clusters with the link strength 407. The collaboration was observed between any two authors. Figure 5 shows the network visualization of co-author and author collaborations.

Although many bibliometric analysis have been conducted globally as a tool in journal evaluation, and better [17-18] understanding the significance of research output in the field of Medical Sciences [1, 2], using bibliometric techniques that can help in construct, analyze, and data visualization approaches [19] for specific scientific journals [20-23]. The purpose of this study is to bibliometrically assess APJTM characteristics since it began being indexed by WOS database in early of 2008, the time at which the journal only published three issues per year. Moreover, move to 6 issues in 2009, and monthly issues distributed annually caused a noticeable growth in the total number of published papers which has not affected the quality of its work. In fact, since 2018 JIPH has been ranked among the second quartile journals in two different disciplines: “Public, environmental and occupational health” with rank (106/186) and “Tropical medicine” with rank (11/21). In past studies, highly cited papers have been preserved as one of many phenomena to validate superior research of a country in the global research field [24, 25].

A study published by reference [25] indicated that the highly cited papers are often considered of great importance for sustaining the status of a research institution, show intensive international collaborations between researchers based on the size of publishing countries [25]. Thus, papers or documents are the most influential one to receive a number of citations than other papers of lesser efficacy [26]. Our study finding shows that the full research article and review paper had obtained more citation score. This finding similar to what has been published [2, 27] which shows that the ratio of articles and reviews were high. From an institutional and countries perspective, four out of ten of the Institutions are from China (Hainan Medical University, Hainan Medical College, Zhengzhou University, and Central South University) were contributed 174 documents between 2008-2019. Further analysis of their contribution to APJTM showed that 615 (28.8) of documents were published by researchers from China only, followed by India 487 (22.8). In contrast, the other three countries include Nigeria 168 (7.9), Iran 148 (6.9) and Thailand 103 (4.8). The co-occurrence networks illustrated a slight shift of research document in APJTM between the year 2008-2013, as shown in 7 different clusters. Unquestionably, more eight clusters were presented during the published documents by APJTM during the year 2014-2019 showing quite different keywords during this period; therefore, it is necessary to establish rules to prevent and control strategies of disease and promote public health.

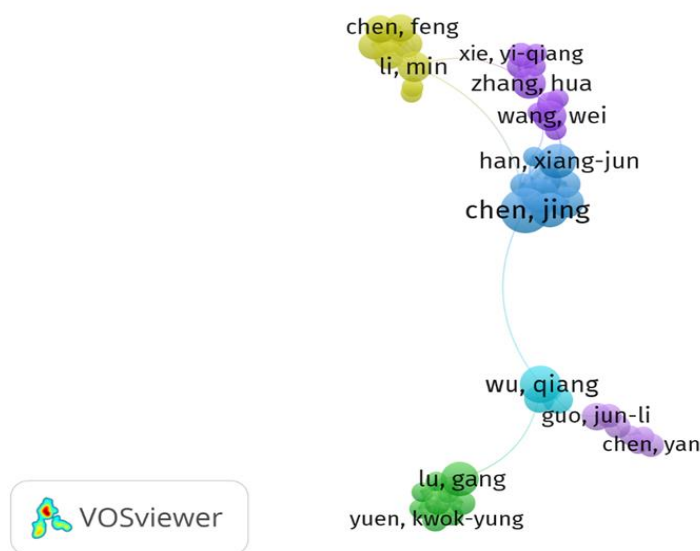


Figure 5. Network visualization of co-author and author collaborations with a minimum frequency of 3 times

4. CONCLUSION

This first bibliometric study of its kind identified that the monthly published articles and citation in the APJTM has increased between 2008-2019. Bibliometric studies techniques can help to identify journal citation behaviour and trends, total citation score, cited articles, most productive authors, productive institutions and countries and can help to identify possible research problems and challenges. In addition, we assess the collaborations, and word co-occurrence networks analysis, and observed that APJTM could increase its impact factor and influence the research circle in the coming future.

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