



Original Article

Trends in global acupuncture publications: An analysis of the Web of Science database from 1988 to 2015

Yen-Ying Kung^{a,b}, Shinn-Jang Hwang^c, Tsai-Feng Li^a, Seong-Gyu Ko^{d,e}, Ching-Wen Huang^f, Fang-Pey Chen^{a,b,*}

^a Center for Traditional Medicine, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

^b Institute of Traditional Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan, ROC

^c Department of Family Medicine, Faculty of Medicine, School of Medicine, National Yang-Ming University, Taipei, Taiwan, ROC

^d Department of Preventive Medicine, College of Korean Medicine, Kyung Hee University, Seoul, Republic of Korea

^e Center for Clinical Research and Drug Department, College of Korean Medicine, Kyung Hee University, Seoul, Republic of Korea

^f Department of Science in Korean Medicine, Graduate School, Kyung Hee University, Seoul, Republic of Korea

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Abstract

Background: Acupuncture is a rapidly growing medical specialty worldwide. This study aimed to analyze the acupuncture publications from 1988 to 2015 by using the Web of Science (WoS) database. Familiarity with the trend of acupuncture publications will facilitate a better understanding of existing academic research in acupuncture and its applications.

Methods: Academic articles published focusing on acupuncture were retrieved and analyzed from the WoS database which included articles published in Science Citation Index-Expanded and Social Science Citation Indexed journals from 1988 to 2015.

Results: A total of 7450 articles were published in the field of acupuncture during the period of 1988–2015. Annual article publications increased from 109 in 1988 to 670 in 2015. The People's Republic of China (published 2076 articles, 27.9%), USA (published 1638 articles, 22.0%) and South Korea (published 707 articles, 9.5%) were the most abundantly prolific countries. According to the WoS subject categories, 2591 articles (34.8%) were published in the category of Integrative and Complementary Medicine, followed by Neurosciences (1147 articles, 15.4%), and General Internal Medicine (918 articles, 12.3%). Kyung Hee University (South Korea) is the most prolific organization that is the source of acupuncture publications (365 articles, 4.9%). Fields within acupuncture with the most cited articles included mechanism, clinical trials, epidemiology, and a new research method of acupuncture.

Conclusion: Publications associated with acupuncture increased rapidly from 1988 to 2015. The different applications of acupuncture were extensive in multiple fields of medicine. It is important to maintain and even nourish a certain quantity and quality of published acupuncture papers, which can play an important role in developing a medical discipline for acupuncture.

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Keywords: Acupuncture; Qualitative method; Statistics

Abbreviations: SCI-E, Science Citation Index-Expanded; SSCI, Social Science Citation Index; SPSS, Statistical Product and Service Solutions; USA, United States of American; WoS, Web of Science.

Conflicts of interest: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

* Corresponding author. Dr. Fang-Pey Chen, Center for Traditional Medicine, Taipei Veterans General Hospital, 201, Section 2, Shi-Pai Road, Taipei 112, Taiwan, ROC.

E-mail address: fpchen@vghtpe.gov.tw (F.-P. Chen).

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1. Introduction

Academic publication is a key factor in the successful development of a medical specialty or discipline. Acupuncture has attracted significant attention and research since its introduction to the Western world and it has become a rapidly growing medical field in academic publications.¹ To the best of our knowledge, there are few bibliometric analyses used to

examine the profile of publication activity related to acupuncture. Knowing the trend of acupuncture publications will be helpful in better understanding the acupuncture academic research and its applications.

Web of Science (WoS) is a powerful research database officially functioning since 2004 by the Thomson Scientific and Health Care Corporation. The WoS database contains not only the affiliation of all authors, but also provides the citation number of published articles. Additionally, WoS provides access to Thomson Reuter's multidisciplinary databases of bibliographic information such as the Science Citation Index-Expanded (SCI-E), Social Sciences Citation Index (SSCI), and the Arts and Humanities Citation Index and Journal Citation Report (JCR).^{2–4} Ultimately, WoS is a powerful web interface providing access to citation databases.

The aim of this study was to analyze the acupuncture publications from 1988 to 2015 by using WoS database to understand the current status of acupuncture research and its applications.

2. Methods

The WoS database was accessed through Taipei Veterans General Hospital Library website on March 10, 2016. In the first stage, “acupunctur*” OR “electroacupunct*” OR “acupoint*” OR “acupressure*” were combined to search worldwide acupuncture publications by Title. Publications in the SCI-E and SSCI from January 1, 1988 to December 31, 2015 were searched, including all article types. Then, publication types, including articles, letters, reviews, proceedings papers, editorial materials and notes were included in the second stage analyses. Publications of meeting abstracts, news item, corrections, correction addition, book chapters, book reviews, reprints, and biographical items were not included. WoS subject category, authors (including all authors), and organization/institute which published articles and the journal name of published articles were analyzed.

In order to analyze the citation number of published articles, we also obtained the citation number of each paper from WoS. The JCR impact factors (2014 version) were performed, after which the top ten most cited articles were calculated from 1988 to 2015.

3. Results

Using a comprehensive search of the WoS database, which included articles published in SCI-E and SSCI journals, we found a total of 8490 articles published about acupuncture worldwide during the period of 1988–2015. After excluding meeting abstracts, news items, corrections, correction additions, book chapters, book reviews, reprints, and biographical items, 7450 articles were included in the final analysis. **Table 1** shows the list of top ten prolific country/areas of articles published about acupuncture. The People's Republic of China (2076 articles, 27.9%), the USA (1638 articles, 22.0%) and South Korea (707 articles, 9.5%) were the countries responsible for the most published articles. Annual articles published

Table 1
Top ten prolific country/areas of published acupuncture articles from 1988 to 2015.

Country/Area	Articles published	% of 7450
People's Republic of China	2076	27.9%
USA	1638	22.0%
South Korea	707	9.5%
England	630	8.5%
Germany	480	6.4%
Taiwan	411	5.5%
Japan	347	4.7%
Sweden	232	3.1%
Australia	228	3.1%
Brazil	180	2.4%

Total of 7450 articles searched from the Web of Science database including articles published in SCI-E and SSCI journals.

from the field of acupuncture rapidly increased from 109 articles in 1988 to 670 articles in 2015.

According to the WoS subject categories, 2591 articles (34.8%) were published in the Integrative and Complementary Medicine category, followed by Neurosciences (1147 articles, 15.4%), General Internal Medicine (918 articles, 12.3%), Clinical Neurology (745 articles, 10.0%), and Anesthesiology (402 articles, 5.4%) (**Table 2**). Interestingly, 233 papers (3.1%) were published in the subject category of Veterinary Science. The top-most five prolific authors in the field of acupuncture publication included Ernst E (Edzard Ernst, UK), Lee H (Hyangsook Lee, South Korea), Park HJ (Hi-Joon Park, South Korea), Lin JG (Jaung-Geng Lin, Taiwan) and Lee MS (Myeong Soo Lee, South Korea) (**Table 3**).

Table 4 listed the top ten journals which published acupuncture articles. It shows that *Evidence Based Complementary and Alternative Medicine* published the most acupuncture articles (539 articles [7.2%]), followed by *Acupuncture in Medicine* (414 articles [5.6%]), and *Journal of Alternative and Complementary Medicine* (389 articles [5.2%]).

Kyung Hee University (South Korea) published the most acupuncture articles (365, 4.9%), followed by the Chinese Academy of Medical Sciences (175 articles, 2.3%), Harvard University (163 articles, 2.2%), China Medical University (140 articles, 1.9%), and Fudan University (139 articles, 1.9%) (**Table 5**).

Table 2
Acupuncture-related published articles in different research fields according to Web of Science subject category.

Web of Science subject category	Articles published	% of 7450
Integrative Complementary Medicine	2591	34.8%
Neurosciences	1147	15.4%
General Internal Medicine	918	12.3%
Clinical Neurology	745	10.0%
Anesthesiology	402	5.4%
Medicine Research Experimental	270	3.6%
Obstetrics Gynecology	237	3.2%
Veterinary Sciences	233	3.1%
Pharmacology Pharmacy	159	2.1%
Cell Biology	147	2.0%

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