Analyzing China's contributions to major dermatologic journals from the past 20 years

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Abstract

Background: Over the past 20 years, China has experienced an increased popularity of Western medicine. The impact of Western medicine in China on the field of dermatology is not well characterized.

Objective: To assess the impact China has had on the field of dermatology by analyzing the total publications to six dermatological journals, compared to two other Asian countries: Japan and Korea.

Methods: PubMed was utilized to search for publications from China, Japan, and Korea within the past 20 years. Descriptive statistics were used to determine the average percentage change in publications during this 20-year period, and the average annual increase in total number of publications from each country. Comparisons were made using one-way ANOVA and two-group t-tests.

Results: From 1998 to 2019, there was a 24% average annual increase in publications from China (M=24.4, SD=24.5), compared to a 6% increase from Japan (M=5.6, SD=25.4, P=0.02) and 8% increase from Korea (M=7.8, SD=23.4, P=0.03).

Conclusion: For the past 20 years, there has been a strong positive trend regarding the total number of publications from China. This finding might be related in part to an increased acceptance of Western medicine, which follows a similar trend during the time period we analyzed.

Keywords: China, Asia, dermatology, journals, publications

Introduction

Over the past 20 years, China has undergone an increased acceptance of Western ideologies. This is particularly true regarding an increased popularity of Western medicine in China. Westernization of China has led to a transition from traditional Chinese medicine to Western medicine [1]. The impact of Western medicine in China on the field of dermatology is not well characterized. A connection might exist between the Westernization of medicine in China and an increased impact on the field of dermatology from China.

In this study, we sought to assess the contributions China has provided to the field of dermatology. We analyzed the trend in total publications to six major dermatologic journals from China and compared this to two other nearby Asian countries: Japan and Korea. We suspect that China's increased acceptance of Western medicine is associated with a positive trend regarding publications in major dermatologic journals.

Methods

The PubMed advanced search builder was utilized to search for publications coming from China, Japan, and Korea in six major dermatologic journals for the past 20 years. We searched for publications that reported their country as "China," "Japan," and "Korea" under affiliation in the details and/or author information section. The journals selected to be analyzed were the following: *The Journal of the*

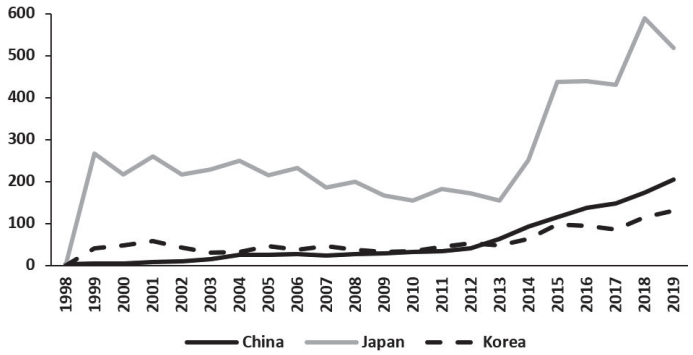

Figure 1. *Comparison of the total number of publications from China, Japan, and Korea in the six major dermatologic journals we assessed: The Journal of the American Academy of Dermatology, The British Journal of Dermatology, JAMA Dermatology, The Journal of Investigative Dermatology, The Journal of Dermatological Science, and The Journal of Dermatology. From 1998 to 2019, there was a total of 1,235 publications from China, 6,274 from Japan, and 1,329 from Korea.*

American Academy of Dermatology, *The British Journal of Dermatology*, *JAMA Dermatology, The Journal of Investigative Dermatology, The Journal of Dermatological Science*, and *The Journal of Dermatology*. These journals were selected based on their respective impact factors and total cites, according to the SCImago Journal and Country Rank [2].

The results by year were downloaded directly from PubMed. We analyzed the total number of publications from 1998 to 2019. Descriptive statistics were used to determine the average percentage change in publications during this 20-year period, as well as the average annual increase in total number of publications from each of the three countries. One-way ANOVA and two-group t-tests were used to make comparisons between the total number of publications from China, Japan, and Korea. P values <0.05 were considered significant.

Results

There was a significant difference between the total number of publications from China, Japan, and Korea by year since 1998 at the P<0.05 level: [F(2,60)=3.72, P=0.03]. From 1998 to 2019, there was a total of 1,235 publications from China, 6,274 from Japan, and 1,329 from Korea in the six journals we analyzed (**Figure 1**). During this 20-year period, there was a 24% average annual increase in publications from China (M=24.4, SD=24.5), compared to a 6% increase from Japan (M=5.6, SD=25.4, P=0.02) and 8% increase from Korea (M=7.8, SD=23.4, P=0.03).

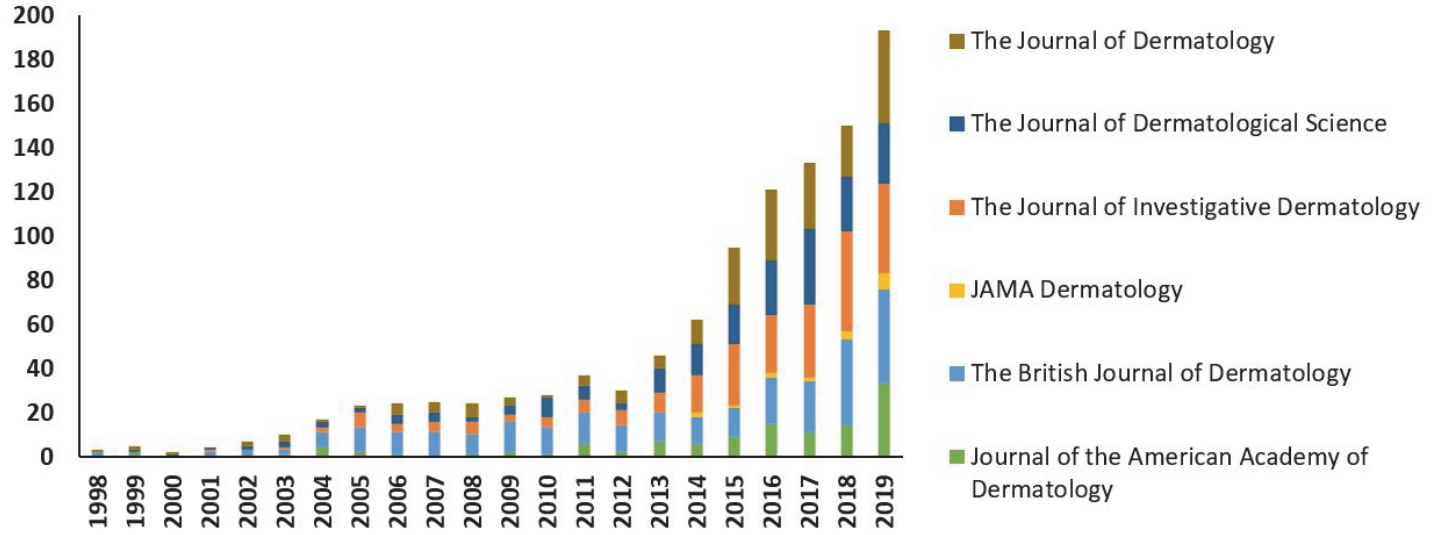

Figure 2. *Comparison of the total number of publications from China in the six major dermatologic journals we assessed. A positive trend exists regarding the increased number of publications from China in each of the six journals: The Journal of the American Academy of Dermatology, The British Journal of Dermatology, JAMA Dermatology, The Journal of Investigative Dermatology, The Journal of Dermatological Science, and The Journal of Dermatology. From 1998 to 2019, there was a 24% average annual increase in publications from China (Mean=24.4, SD=24.5), compared to a 6% increase from Japan (Mean=5.6, SD=25.4, P=0.02) and 8% increase from Korea (Mean=7.8, SD=23.4, P=0.03).*

In 1998, there was a total of three publications from China in the following journals: *The Journal of the American Academy of Dermatology*, *The British Journal of Dermatology*, *JAMA Dermatology, The Journal of Investigative Dermatology, The Journal of Dermatological Science*, and *The Journal of Dermatology*. In 2019, the total number of publications in these journals was 205, the highest it has ever been. Going from three publications in 1998 to 205 publications in 2019 is a 6,733% total increase in annual publications. To put this into perspective, there were more publications from China in these dermatologic journals in just the year 2019 (205) than there were in 11 years from 1998 to 2009 (195), (**Figure 2**). In 2019, there were 33 publications in *The Journal of the American Academy of Dermatology*, 55 publications in *The British Journal of Dermatology*, 15 publications in *JAMA Dermatology,* 43 publications in *The Journal of Investigative Dermatology,* 14 publications in *The Journal of Dermatological Science*, and 45 publications in *The Journal of Dermatology* (**Figure 2**).

Discussion

From 1998 to 2019, a positive trend exists regarding the total number of publications coming from China in the six major dermatologic journals we analyzed (**Figures 1, 2**). During this time, there has been a consistent annual increase in dermatologic publications. For the past 20 years, China's contributions to many major dermatologic journals has increased exponentially. The rise in dermatologic publications in China is likely associated with increased funding from the National Nature and Science Foundation of China (NSFC), which is an organization that is affiliated with China's state council and supports basic and applied research [3]. Such funding has helped lead to a massive expansion in the field of dermatology in China, especially within the past 10 years. According to the Science Citation Index, Chinese dermatologists have published more than 1,000 papers over the past 5 years [3].

The increase in dermatologic publications in China might be explained by the increased popularity of Western medicine in China. The country was once dominated by traditional Chinese medicine. However, the influence of Western medicine over the years has led to it becoming the most popular form of medicine in China [4]. In 1993, based on the quota established by China's government, an average county-level traditional Chinese hospital had about 15 physicians trained in traditional Chinese medicine (TCM), compared to only 10 physicians trained in Western medicine [1]. Only 15 years later in 2008, the number of TCM physicians working in a typical county-level traditional Chinese hospital barely changed (about 16-17), whereas the number of Western medicine physicians increased from 10 to 30 during this time [1]. Additionally, in a survey of 97 TCM hospitals and 103 general hospitals between 1999 and 2004, the percentage of service revenue from Western medicine increased from 44.3% to 47.4%, compared to a decrease in TCM service revenue from 26.4% to 18.8% [5]. China's national statistics also showed a similar trend, with an increased percentage of revenue from Western medicine for TCM hospitals from 59.3% in 1999 to 62.2% in 2003 and 66.1% in 2008; however, the percentage of revenue from TCM declined from 18% in 1999 to 15.4% in 2003 and 13.7% in 2008 [5]. This timeline of Westernization of medicine in China aligns very well with the period in which a significant increase in dermatologic publications occurred.

Not only has the quantity of publications from China increased, but the quality of publications has become stronger as well. Recently, some major contributions from China include the following: establishing the relationship between HLA-B*13:01 and dapsone hypersensitivity syndrome [6] and identifying several novel susceptibility loci for leprosy [7], psoriasis [8, 9], vitiligo [10], atopic dermatitis [11], and systemic lupus erythrematosus [12]. Chinese dermatologists also helped discover how psoriasis progression is associated with IL23 stimulating dermal gamma-delta T cells to produce IL17 [13]. Additionally, they have helped characterize whole-genome DNA methylation patterns in involved and uninvolved skin lesions from patients with psoriasis via methylated DNA immunoprecipitation sequencing [14]. They were

also the first to identify the mutations in SCN9A, which leads to a defective voltage-gated sodium channel alpha subunit and ultimately causes primary erythromelalgia [15]. These are just some of the many major contributions China has made to the field of dermatology within the past 15 years.

This study has limitations. The PubMed advanced search builder relied on publications to report their country as "China," "Japan," and "Korea" under affiliation in the details and/or author information section in order to be counted as a publication from one of the three countries. Thus, the actual total publication count from these countries might be higher than our results show. However, we believe the results are valid in the analysis of China's increased contributions to the field of dermatology and the exploration of its association with China's increased popularity of Western medicine.

Conclusion

The Westernization of medicine in China and increased numbers of publications to major dermatologic journals from China follows a similar positive trend during the same time period we analyzed (1998 to 2019). Thus, an association might exist between China's acceptance of Western medicine and an increased contribution to the field of dermatology for the past 20 years.

Potential conflicts of interest

S.R.F. has received research, speaking and/or consulting support from a variety of companies including Galderma, GSK/Stiefel, Almirall, Leo Pharma, Baxter, Boeringer Ingelheim, Mylan, Celgene, Pfizer, Valeant, Taro, Abbvie, Cosmederm, Anacor, Astellas, Janssen, Lilly, Merck, Merz, Novartis, Regeneron, Sanofi, Novan, Parion, Qurient, National Biological Corporation, Caremark, Advance Medical, Sun Pharma, Suncare Research, Informa, UpToDate and National Psoriasis Foundation. He is founder and majority owner of www.DrScore.com and founder and part owner of Causa Research, a company dedicated to enhancing patients' adherence to treatment.

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