DERMATOLOGICA SINICA 33 (2015) 154–156

Contents lists available at ScienceDirect

Dermatologica Sinica

journal homepage: http://www.derm-sinica.com

BRIEF REPORT

Bibliometric characteristics of systematic reviews in dermatology: A cross-sectional study through Web of Science and Scopus

Juan Manriquez [1,*], Romina Andino-Navarrete [1], Karina Cataldo-Cerda [1], Isidora Harz-Fresno [2]

[1] Department of Dermatology, Pontificia Universidad Catolica de Chile, Santiago, Chile
[2] Dr Luis Tisne Brousse Hospital, Santiago, Chile

ARTICLE INFO

Article history:
Received: Aug 25, 2014
Revised: Dec 5, 2014
Accepted: Dec 28, 2014

Keywords:
evidence-based dermatology
systematic reviews

ABSTRACT

The bibliometric characteristics of systematic reviews (SRs) in dermatology are unknown. We analyzed a group of 309 SRs using Scopus and the ISI Web of Science. These 309 SRs were published between 2008 and 2012 in journals with a median journal impact factor of 3.63; 48.2% ($n = 149$) included meta-analysis, 11.6% ($n = 36$) were Cochrane reviews, and 76.7% ($n = 237$) summarized enough evidence to inform clinical decisions. The most common country of origin was the USA ($n = 66$, 21.4%), and the most frequently studied disease was psoriasis ($n = 50$, 16.2%).

Introduction

Systematic reviews (SRs) are a type of research aimed at identifying and synthesizing literature relevant to a specific research question and are considered the highest level of evidence. There are many different sources of SRs, one of which is the Cochrane Collaboration (CC), the most methodologically rigorous source and reservoir of SRs.[1]

Bibliometrics is a type of research based on the quantitative analysis of publications as a way of understanding the development of a field of knowledge as a whole. Bibliometric studies can be used to study the regional patterns of research, as well as to define the content, citations, and funding sources in specific areas of medical research.[2]

There are two databases widely used to obtain and analyze citations and other bibliometrics: Web of Science (WOS) and Scopus (SC). WOS was the only way to obtain citation counts until 2004, which was the time when SC became available. Both databases require a paid subscription and provide broad coverage of selected peer-reviewed journals, including CC-SRs.[2] Whereas WOS has more restricted criteria for journal inclusion, SC provides full coverage to all Medline indexed journals.

The number of dermatologic SRs is increasing at a steady rate; however, there are no studies of bibliometrics in dermatologic SRs, with only scarce descriptive analyses in other health specialties.[3,4] Consequently, information such as the type and the journal impact factor (JIF), where dermatologic SRs are published, the number of citations, the main research questions, the country of origin of reviewers, the role of CC, the funding sources, among other features, are absolutely unknown.

We developed a cross-sectional bibliometric study with the objective of characterizing the main bibliometric features of a group of SRs in dermatology.

Methods

We searched for dermatologic SRs and citations to them in SC and WOS in December 2013. We decided to analyze both databases because they have differences in coverage, accessibility, and updating, and because they have differences in the retrieved number of citations.[2] The search was restricted to SRs published from January 2008 to December 2012, because it allowed for a minimum of 1 year to accumulate citations for the most recently published SRs. Searches were restricted to records with the words "meta-analysis" or "systematic review" in the title, considering that the Preferred Reporting Items for Systematic Reviews and Meta-

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

* Corresponding author. Department of Dermatology, Pontificia Universidad Catolica de Chile, Marcoleta 350 st., Santiago, Chile.
E-mail address: jjmanriq@uc.cl (J. Manriquez).

http://dx.doi.org/10.1016/j.dsi.2014.12.007

Analyses (PRISMA) Statement recommends that SRs include either term in the title.[5] We did not use a language restriction. Search strategies are available in Table 1. As CC-SRs are not labeled as "meta-analysis" or "systematic review" in the title, we performed a separate search of the Cochrane Skin Group (CSG) database in order to find SRs first published in the same time span. The bibliometrics of CSG-SRs were obtained from WOS and SC.

The records and full texts obtained from the three searches ($n = 801$) were gathered for analysis. For inclusion, the review had to fulfill the Database of Abstracts of Reviews of Effectiveness criteria for SRs.[6] Article inclusion and data extraction were performed independently by two reviewers, and disagreements were resolved through discussion. The variables collected for each SR and the journal where each SR was published are summarized in Table 1. An SR was catalogued as clinically useful when data provided at least sufficient evidence to allow reviewers to support recommendations or suggestions. If the authors did not present any clinical recommendation based on SR data, this review was catalogued as clinically useless.

All statistical tests were two-tailed with the significance level set at 0.05. Categorical variables were tested using the Chi-square test. Because all numerical variables were nonnormally distributed, analysis was performed using the Kruskal–Wallis test.

Results

After excluding duplicates, we obtained a final number of 309 assessed SRs. The vast majority (95.8%) were published in WOS indexed-journals (median 2-year JIF, 3.63; range, 0.228–29.978); WOS citations per year available to be cited ranged between 0 and 46 citations (median = 3.5); and only 12 SRs (3.9%) were published in languages other than English. Distribution of citations was asymmetrical: 10% of the most cited SRs had 39% of the total citations, and 10% of the least cited SRs had 0.1% of the total citations. None of the CSG-SRs were among the 10% most cited reviews, nor were the number of citations or the 2-year JIF of a journal different along the analyzed years ($p = 0.118$ and 0.274, respectively).

A total of 36 SRs (11.6%) corresponded to CSG-SRs, and 165 SRs (53.4%) were published in dermatology specialty journals. In 149 SRs (48.2%) a meta-analysis was conducted, and 35.3% ($n = 109$) were SRs based exclusively in randomized controlled trials. A total of 237 SRs (76.7%) summarized enough evidence to inform clinical decision making. We did not find any differences in the proportion of these categories in the analyzed years ($p = 0.190$, 0.354, 0.445, 0.709, and 0.653, respectively).

The most common country of origin of the corresponding author was the USA ($n = 66$, 21.4%), followed by China ($n = 37$, 12%), the United Kingdom ($n = 34$, 11%), and the Netherlands ($n = 31$; 10%). International collaboration was present in 27.8% ($n = 86$) of SRs. The most frequently studied diseases were psoriasis ($n = 50$; 16.2%), followed by skin infections ($n = 35$; 11.3%), nonmelanoma skin cancer ($n = 29$; 9.4%), atopic dermatitis ($n = 29$; 9.4%), adverse drug reactions ($n = 25$; 8%), melanoma ($n = 24$; 7.7%), and wounds ($n = 21$; 6.7%). Meanwhile, the most frequently studied interventions were medications ($n = 131$; 42.4%), followed by epidemiological studies ($n = 48$; 15.5%). A list of the diseases and interventions least analyzed (i.e., <10 SRs in the whole study period) is shown in Table 2.

We did not find any differences in the percentage of the most frequently recorded corresponding author countries, international collaboration, the most frequently studied diseases, or the most frequently analyzed interventions, along all the years analyzed ($p = 0.190$, 0.319, 0.554, and 0.222, respectively).

Finally, a total of 46 SRs (14.9%) did not report if the authors received funding, and 130 (42%) were funded SRs. In the case of funded SRs, the funding sources came from government ($n = 34$; 26.1%), mixed (private foundations and universities) ($n = 34$; 26.1%), industry ($n = 32$; 24.6%), and private foundations ($n = 30$; 23.1%). Evolution of different categories of funding during the 4 years was as follows: in 2008, funded SRs were more frequent than nonfunded ones ($p = 0.020$). Industry funding was the least represented funding source in 2009 ($p = 0.048$), and the most

Table 1 Search strategies used for WOS and Scopus databases, and variables collected for each SR and journal where each SR was published.

Search strategies
Scopus
#1 Title = [(systemat * and review *) or (meta-anal *) or (metaanal *) or (metanal *)]
#2 Affiliation = (derm * or skin * or cutan *)
#1 and #2
Web of Science
#1 Title = [(systemat * and review *) or (meta-anal *) or (metaanal*) or (metanal *)]
#2 Research area = dermatology
#3 WOS category = dermatology
#4 Address = (derm* OR skin* OR cutan*)
#1 and (#2 or #3 or #4)
Analyzed variables for each systematic review
• Number and countries for all the authors and the corresponding author
• Funding [a]
• Type of intervention and studied skin disease
• Presence of meta-analysis
• Mean number of cites [b]
• Clinical usefulness [c]
• If the analyzed SR was based on randomized controlled trials
• Presence of cooperation [d]
Variables for each journal
• Two-year JIF [e]
• If the journal was primarily dedicated to dermatology [f]

JIF = journal impact factor; SR = systematic review; WOS = Web of Science.

[a] If reported or not, and the origin of funding if reported.

[b] Cites per year available to be cited in Web of Science at December 2013, calculated as 2013 minus year of publication.

[c] An SR was catalogued as clinically useful when data provided at least sufficient evidence to allow reviewers to support recommendations or suggestions. If authors did not present any clinical recommendation based on SR data, this review was catalogued as clinically useless.

[d] Defined as at least one coauthor from a different country than the corresponding author's country.

[e] Journal Citation Reports Science Edition 2012.

[f] Cochrane Library was considered a nondermatological journal.

Table 2 Diseases (or conditions) and interventions less analyzed (i.e., <10 SR in the entire 4-year study period).

Diseases	Number of SRs found	% from the total of SRs found
Seborreic dermatitis	2	0.65
Skin manifestations of systemic disorders	2	0.65
Urticaria	2	0.65
Contact dermatitis	4	1.29
Vascular malformations	4	1.29
Papulo-escamous disorders other than psoriasis	5	1.62
Immunobullous diseases	5	1.62
Vitiligo	6	1.94
Aesthetical conditions	7	2.27
Noninfectious diseases of nail and hair	8	2.59
Educational interventions and teledermatology	8	2.59
Acne and rosacea	9	2.91
Burns	9	2.91
Interventions		
Immunizations	3	0.97
Nutritional modifications	4	1.29
Skin surgery	6	1.94
Psychological	6	1.94
Complimentary medicine	7	2.27

SR = systematic review.

represented source in 2010 ($p = 0.029$). In 2011 and 2012, there were no differences in the sources of funding and between funded and nonfunded SRs.

Discussion

According to our findings, dermatologic SRs are characterized as being massively published in WOS indexed and English language journals, with approximately one half being published in dermatology specialty journals with an average JIF for dermatology specialty, but considered low for general health literature.[7] Importantly, >75% of SRs in dermatology provide enough evidence in order to inform clinical decisions, a fact that is in line with previous analyses.[8,9] We found that some diseases such as seborreic dermatitis, skin manifestations of systemic disorders, and urticaria, and some interventions such as immunizations and dietary modifications, were seldom included in SRs, although the vast majority of them are highly prevalent in dermatological practice. It is also possible that there are more dermatological diseases not identified in our search that had never been the subject of SRs.

Approximately one half of the analyzed SRs contained a meta-analysis and a third of SRs were randomized controlled trial-based, with approximately 10% of CSG-SRs. Less than 30% SRs were performed with international collaboration. These percentages are similar to those previously reported in other specialties.[3,4] Surprisingly, not one CSG-SR was among the 10% most cited reviews. This information is remarkable considering the demonstrated fact that CSG-SRs are of higher methodological quality than other reviews.[10]

Even though the number of SRs in dermatology is growing at a steady rate, reflecting a general increase in published SRs,[3,4] all the aforementioned features showed to be constant within the 5 years analyzed.

Although our objective was not to develop an SR, a limitation of this study is that some SRs could not be found, mainly because the search was limited to three databases and to SRs with the words "systematic review" or "meta-analysis" in the title, according to the PRISMA statement. This could also cause bias by selecting far higher quality reviews.

There are some other features that we did not analyze, some of which would be interesting to assess, such as the methodological quality of the SRs, design of included studies, and the relationship of these to the citation count and the impact factor of the journals where these SRs are published.

References

1. Williams HC, Dellavalle RP. The growth of clinical trials and systematic reviews in informing dermatological patient care. *J Invest Dermatol* 2012;**132**:1008–17.
2. Kulkarni AV, Aziz B, Shams I, Busse JW. Comparisons of citations in Web of Science, Scopus, and Google Scholar for articles published in general medical journals. *JAMA* 2009;**302**:1092–6.
3. Chen H, Jhanji V. Survey of systematic reviews and meta-analyses published in ophthalmology. *Br J Ophthalmol* 2012;**96**:896–9.
4. Moher D, Tetzlaff J, Tricco AC, Sampson M, Altman DG. Epidemiology and reporting characteristics of systematic reviews. *PLoS Med* 2007;**4**:e78.
5. Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Int J Surg* 2010;**8**:336–41.
6. Petticrew M, Song F, Wilson P, Wright K. Quality-assessed reviews of health care interventions and the database of abstracts of reviews of effectiveness (DARE): NHS CRD review, dissemination, and information teams. *Int J Technol Assess Health Care* 1999;**15**:671–8.
7. Fleming PS, Koletsi D, Seehra J, Pandis N. Systematic reviews published in higher impact clinical journals were of higher quality. *J Clin Epidemiol* 2014;**67**:754–9.
8. Davila-Seijo P, Batalla A, Garcia-Doval I. Usefulness of Cochrane Skin Group reviews for clinical practice. *Actas Dermosifiliogr* 2013;**104**:679–84.
9. Parker ER, Schilling LM, Diba V, Williams HC, Dellavalle RP. What is the point of databases of reviews for dermatology if all they compile is "insufficient evidence"? *J Am Acad Dermatol* 2004;**50**:635–9.
10. Collier A, Heilig L, Schilling L, Williams H, Dellavalle RP. Cochrane Skin Group systematic reviews are more methodologically rigorous than other systematic reviews in dermatology. *Br J Dermatol* 2006;**155**:1230–5.