Top-Cited Dermatology Authors Publishing in 5 “High-Impact” General Medical Journals

Robert S. Stern, MD; Kenneth A. Arndt, MD

Background: In addition to publishing in the dermatologic literature, some dermatologists also publish articles in the general medical journals, which enjoy wide circulation and whose articles are often cited.

Objective: To identify articles and citations to these articles that the most frequently cited authors in the dermatologic literature published in highly cited general medical journals.

Design: We obtained a citation database from the Institute of Scientific Information, Philadelphia, Pa, that identified all articles published by the top-cited authors in the dermatologic literature in 5 “high-impact” general medical journals.

Setting: The 5 high-impact general medical journals with the historically highest impact factors.

Subjects: Two hundred top-cited authors in dermatology journals and their coauthors.

Main Outcome Measure: Number of citations to articles published in 5 high-impact general medical journals.

Results: From 1981 to 1998, 120 of the 200 top-cited dermatology authors published a total of 674 papers in the 5 most highly cited general medical journals. Original articles published in these high-impact general medical journals were cited an average 7.5 times more often than articles published in dermatology journals.

Conclusions: Top-cited authors in dermatology journals also frequently publish in the leading 5 high-impact general medical journals. Publications in these journals by dermatologists are often highly cited.

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Many criteria can be used to judge the relative importance, prominence, or scientific merit of a journal. One criterion is the impact factor, an index that measures the average number of citations per article in the last 5 years.1-3 Five general medical English-language journals with wide circulation have the most consistently top-ranked impact factors. They are the New England Journal of Medicine, the Journal of the American Medical Association (JAMA), Lancet, Annals of Internal Medicine, and the British Medical Journal. Three are published in the United States (New England Journal of Medicine, JAMA, and Annals of Internal Medicine) and the other 2 in the England (Lancet and the British Medical Journal). The New England Journal of Medicine, JAMA, and Lancet are general medical journals that publish noteworthy articles from all medical and surgical disciplines. Annals of Internal Medicine and the British Medical Journal focus primarily on internal medicine, its subspecialties, and public health. Although many might argue whether these are the “best,” based on impact factors in the last 5 years, they were the most often cited large circulation general medical journals published in English.

Cutaneous diseases are common and often cared for by nondermatologists and dermatologists alike. All 5 of the most highly cited general medical journals regularly publish articles on skin disease, which include many topics germane both to dermatology and other aspects relevant to the skin such as burns, skin testing, and wound healing. As a result, authors of articles concerning the skin published in these journals are likely to include both dermatologists as well as others with expertise in other medical, surgical, or basic science disciplines.

In an earlier analyses, we identified the most highly cited authors in derma-
MATERIALS AND METHODS

Using methods we detailed previously, we identified the 200 most frequently cited authors of papers of all types published in 24 dermatology journals from 1981 to 1996. We refer to these authors as "top dermatology authors." The Institute of Science Information, Philadelphia, Pa, then matched these 200 author names to the name of all authors of all papers published in 5 "high-impact" general medical journals—the New England Journal of Medicine, JAMA, Lancet, Annals of Internal Medicine, and British Medical Journal (which we refer to subsequently as the 5 high-impact medical journals) from 1981 to mid 1998. In this way, almost all papers published in these 5 high-impact medical journals during this period which included 1 or more authors who were also among the 200 most highly cited authors in the general dermatologic literature were likely to have been identified. The Institute of Science Information then provided us with a database that included citations, affiliation, other authors, institution, and type of article to all articles identified. We then analyzed these papers to identify total citations according to author irrespective of that author's place among all authors of that paper. We separately calculated total citations to first authors of each paper who were among the 200 most highly cited authors in the dermatologic literature. We also identified the most highly cited papers by these authors. On the basis of these data, we identified the most highly cited dermatologists in the general medical literature who were either among the 200 most highly cited authors in the dermatologic literature or were these author's coauthors. The t test was used to test for statistical significance of differences in means.

RESULTS

We identified 674 papers from 1981 to mid 1998 in the 5 high-impact general medical journals whose authors included 1 of the top 200 cited authors in the 24 leading dermatology journals from 1981 through 1996. One hundred ninety three of the 674 papers were classified as original articles. Based on a MEDLINE search these 193 original articles represent about one fifth of all articles with a key word or subject heading of "skin disease" and an abstract published in these 5 high-impact general medical journals during this period (we identified 997 such articles by these criteria). Altogether, the 674 papers were cited a total of 16 582 times, an average of 25 citations per article. The 193 original articles were cited 11 066 times, an average of 57 citations per article.

Table 1 lists the number of papers and citations for each of the 5 high-impact general medical journals we studied with 1 or more of the most highly cited authors in the dermatologic literature as an author. The number of original articles published by the 200 most highly cited dermatology authors were comparable in the New England Journal of Medicine, Lancet, and British Medical Journal (Table 1). However, the New England Journal of Medicine's average number of citations per article was significantly higher than the other 2 journals as well as that of JAMA, but only slightly higher than that for Annals of Internal Medicine, which published only one third as many original articles by top-cited dermatology authors as did the New England Journal of Medicine (Table 1).

Of the top 200 cited dermatology authors in the dermatologic literature, we identified 120 (60%) who wrote at least 1 paper in the 5 high-impact general medical journals. These authors had a total of 1310 coauthors for these papers who were not among the top 200 cited authors in the dermatology journals. Therefore, in total we identified 1430 separate authors who were either among the top 200 cited authors in the dermatologic literature or the coauthors of these individuals.

Altogether, we identified 34 countries as the source of these 674 papers (some papers had multiple countries listed). Twenty countries were the source for papers that had been cited more than 100 times in any of these 5 high-impact general medical journals. Only 3 countries (the United States, 10 511 citations; United Kingdom, 4125 citations; and Germany, 1041 citations) were listed as a source country for papers cited a total of more than 1000 times.

The source countries for papers varied greatly among the journals studied. Papers from dermatology authors published in JAMA and Annals of Internal Medicine were almost exclusively (>85% of papers and citations) from US authors. The other US journal, the New England Journal of Medicine, included dermatology corresponding authors from 44 countries outside the United States. Only 7 of 152 papers published in the British Medical Journal had US-based authorship credited. Authors from the United Kingdom accounted for more than 80% of papers we identified in this journal. For the Lancet, most papers came from the United Kingdom, with US authors represented in slightly more than 15% of papers. Authors from 23 other countries also published papers in the Lancet.

The 10 most highly cited authors in the 5 high-impact general medical journals from our sample of top dermatology authors are listed in Table 2. Of the 674 papers we identified as at least in part the product of the top 200 dermatology authors, 46 (7%) had been cited at least 100 times and 13 more than 200 times (Table 3).
We separately analyzed first authors of the papers that included at least 1 of the top 200 authors in dermatology journals. We identified 152 different first authors of the 674 papers in our sample. Of these first 152 authors, only 33 were also among the top 200 dermatology journal authors. The remaining 119 first authors had as coauthors 1 or more of the top 200 cited authors in dermatology journals, but were not themselves among the top 200 cited authors in dermatology journals. Table 4 lists the top 10 first authors according the number of citations credited to those articles of which they were first author. Only 33 first authors published papers in these 5 high-impact general medical journals from 1981 to 1996 that had been cited at least 100 times. Among all first authors of original articles, only 1 author had published original articles in 3 of the 5 top-cited journals and 10 authors in 2 different journals. The remaining 142 first authors published all their original articles (as first authors) in the same journal.

Of the 1430 authors in our study, only 16 collaborated with another specific author on at least 5 papers published in the high-impact general medical journals we studied. There were only 3 pairs of individuals who collaborated on 10 or more papers: E. D. and W. B. Shelley; T. B. Fitzpatrick and A. J. Sober; and J. Voorhees and C. N. Ellis.

There were a total of 404 organizations (ie, universities, hospitals, research institutes) credited with 1 or more papers in our sample. The top 10 organizations and the number of citations to papers credited to them (in whole or part) are provided in Table 5.

It is very difficult to measure the true value and impact of an article or if the communication contains a significant conceptual change about a disease or the manner in which care is provided. One measure that is readily available is the extent to which this information is cited in subsequent publications. The calculation most often used is the impact factor, a number which measures the average number of citations per article. The extent to which the impact factor is an equitable or optimal measure of the relative “impact” or merit of an article is controversial. We are unaware of an alternative system that has enjoyed as wide acceptance. Our prior work on publishing in the medical literature has dealt with information published solely in dermatologic biomedical journals.12 One question that has been more difficult to assess has been to identify and evaluate the importance of articles written by dermatologists which have been published in high-impact general medical journals. Indeed, authors who believe they have extremely important or groundbreaking information will often publish their best works in high-circulation, high-impact, internationally distributed general medical journals in preference to those within their specialty.

In this article we have examined the citation data for all papers published in the 5 highest impact general medical journals during the period beginning from 1981 to 1996 that included any of the 200 most frequently cited authors for papers published in 24 dermatology journals.4 Of the 674 papers identified, 193 represented original articles, which were cited 11 066 times (57 citations per articles), much more often than the average of 8 citations for original articles in the dermatologic literature. The apparently greater reach and notice of clinically oriented papers published in the 5 high-impact general medical journals is illustrated by the fact that 13 of 193 articles published by top-cited dermatology authors were cited more than 200 times, but only 2 of 29 349 original articles published in 23 dermatology journals that are clinically oriented (ie, excluding the Journal of Investigative Dermatology) were cited this often. The odds that an article published by a highly cited dermatology author in any of the top 5 cited general medical journals would be cited at least 100 times was 141 times higher than the probability that articles published in a clinically oriented dermatol-

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**Table 1. Number of Papers and Citations by Type of Article by Journal in 1981-1998 ISI Database**

<table>
<thead>
<tr>
<th>Journal</th>
<th>Papers</th>
<th>Citations</th>
<th>Average Citations per Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England Journal of Medicine</td>
<td>151</td>
<td>6644</td>
<td>44</td>
</tr>
<tr>
<td>Lancet</td>
<td>289</td>
<td>4360</td>
<td>16</td>
</tr>
<tr>
<td>Annals of Internal Medicine</td>
<td>37</td>
<td>2234</td>
<td>60</td>
</tr>
<tr>
<td>Journal of the American Medical Association</td>
<td>85</td>
<td>1682</td>
<td>20</td>
</tr>
<tr>
<td>British Medical Journal</td>
<td>132</td>
<td>1662</td>
<td>13</td>
</tr>
<tr>
<td>All 5 High-Impact General Medical Journals</td>
<td>674</td>
<td>16 582</td>
<td>25</td>
</tr>
</tbody>
</table>

*These articles were written by the 200 most highly cited authors in dermatology journals. ISI indicates Institute for Scientific Information, Philadelphia, Pa.

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**Table 2. Ten Most Frequently Cited Dermatology Authors for All Types of Articles Published in 5 General Medical Journals**

<table>
<thead>
<tr>
<th>Author</th>
<th>Total Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stern, R. S.</td>
<td>1241</td>
</tr>
<tr>
<td>Voorhees, J. J.</td>
<td>1177</td>
</tr>
<tr>
<td>Mackie, R. M.</td>
<td>1096</td>
</tr>
<tr>
<td>Kraemer, K. H.</td>
<td>976</td>
</tr>
<tr>
<td>Ellis, C. N.</td>
<td>894</td>
</tr>
<tr>
<td>Hamilton, T. A.</td>
<td>862</td>
</tr>
<tr>
<td>Griffiths, C. E. M.</td>
<td>783</td>
</tr>
<tr>
<td>Clark, W. H.</td>
<td>686</td>
</tr>
<tr>
<td>Elder, D. E.</td>
<td>686</td>
</tr>
<tr>
<td>Katz, S. I.</td>
<td>671</td>
</tr>
</tbody>
</table>
assessed by blended impact factor. Indeed, the articles in the dermatologic literature, as we previously published most often in these journals were very similar to the top 6 organizations in both of those studies. Of the 10 most frequently cited dermatology authors irrespective of place among authors published in these 5 journals, 3 were also among the top 10 identified as first authors of articles published in the general medical literature. One author was found to be the most cited by both criteria.

This work is limited in that it did not assess authors from within dermatology who published in the 5 high-impact general medical journals who are not among the 200 most highly cited found from our previous work and, therefore, emphasizes clinical rather than basic science productivity. Many of the 200 top authors, and many other dermatologists, certainly have contributed in important ways to other basic science and clinical biomedical journals than the 5 studied in this article. The top authors publishing in the dermatologic literature make a substantial contribution to publishing articles in the top general medical journals. Top-cited dermatology authors publishing in the general medical literature are frequently cited indicating that dermatology journals, would be cited this often (18.14% vs 0.16%). Sixty percent of the top 200 dermatology authors were cited on at least 1 paper in these medical journals, along with 1310 coauthors in 34 countries. The organizations found to be sources of papers published most often in these journals were very similar to the organizations responsible for publishing top-ranked articles in the dermatologic literature, as we previously assessed by blended impact factor. Indeed, the National Institutes of Health, Bethesda, Md, and Harvard University, Beth Israel Hospital, Boston, and Massachusetts General Hospital, Boston, represented 4 of the top 6 organizations in both of those studies. Of the 10 most frequently cited dermatology authors irrespective of place among authors published in these 5 journals, 3 were also among the top 10 identified as first authors of articles published in the general medical literature. One author was found to be the most cited by both criteria.
cal journals and subsequently cited from this small group of dermatologists also indicate the importance of dermatology to general medicine. Articles published by the 200 dermatologists and their colleagues in the top-cited general medical journals were cited much more frequently than the articles published by these authors in the dermatologic literature. This suggests that for important observations concerning clinical dermatology to have greatest impact they are best published in high-impact general medical journals.

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Corresponding author: Robert S. Stern, MD, Beth Israel Deaconess Medical Center, Harvard Medical School, Department of Dermatology, 330 Brookline Ave, Boston, MA 02215 (e-mail: rstern@caregroup.harvard.edu).

REFERENCES


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