Social Networking Sites
Emerging and Essential Tools for Communication in Dermatology

Mahsa Amir, MD; Blake P. Sampson, MD; Dawnielle Endly, DO; Jennifer M. Tamai, MD; Jill Henley, DO; Ann Chang Brewer, MD; Jeffrey H. Dunn, MD; Cory A. Dunnick, MD; Robert P. Dellavalle, MD, PhD, MSPH

IMPORTANCE The use of social media by dermatology journals and professional and patient-centered dermatology organizations remains largely unknown and, to our knowledge, has yet to be fully evaluated.

OBJECTIVE To evaluate and quantify the extent of involvement of dermatology journals, professional dermatology organizations, and dermatology-related patient advocate groups on social networking sites.

DESIGN, SETTING, AND PARTICIPANTS We obtained an archived list of 102 current dermatology journals from SCImago on the World Wide Web and used the list to investigate Facebook, Twitter, and individual journal websites for the presence of social media accounts. We identified professional and patient-centered dermatology organization activity on social networks through queries of predetermined search terms on Google, Facebook, Twitter, and LinkedIn. The activity of each entity was documented by recording the following metrics of popularity: the numbers of Facebook “likes,” Twitter “followers,” and LinkedIn “members.”

MAIN OUTCOMES AND MEASURES The numbers of Facebook likes, Twitter followers, and LinkedIn members corresponding to each dermatology journal and each professional and patient-related dermatology organization.

RESULTS On July 17, 2012, of the 102 dermatology journals ranked by SCImago, 12.7% were present on Facebook and 13.7% on Twitter. We identified popular dermatology journals based on Facebook likes and Twitter followers, led by the Journal of the American Academy of Dermatology and Dermatology Times, respectively. Popular professional dermatology organizations included dermRounds Dermatology Network (11,251 likes on Facebook and 2,900 followers on Twitter). The most popular dermatology patient-centered organizations were the Skin Cancer Foundation (20,119 likes on Facebook), DermaTalk (21,542 followers on Twitter), and the National Psoriasis Foundation (200 members on LinkedIn).

CONCLUSIONS AND RELEVANCE Patient-centered and professional dermatology organizations use social networking sites; however, academic journals tend to lag behind significantly. Although some journals are active in social media, most have yet to recognize the potential benefits of fully embracing popular social networks.
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ith more than 11 billion searches on the World Wide Web performed every month in the United States, the Internet has quickly become one of the most widely used sources of information. \(^1\) This growth has been catalyzed in part by the rapid development of social media websites. Since the development of the first major social media network in 1997, \(^2\) the popularity and application of social media has expanded from virtual nonexistence to an estimated 1.43 billion users by the end of 2012. \(^3\) The percentage of all adult Internet users who visit social networking sites has grown from 8% in 2005 \(^4\) to 74% in 2012. \(^5\) Social networking sites have now become some of the most widely used websites, with hundreds of millions of users around the globe. \(^6-9\) Social networking sites allow users to easily construct profiles and connect with other users with whom they share information through a variety of integrated tools within the network, including updates, messages, and picture and video uploads. \(^7\) The social media can be used by individuals, groups, and organizations to create avenues through which users can disseminate and access information.

Virtual networking sites also facilitate online support communities and provide platforms for engaged patients to discuss specific conditions and diseases. \(^10\) In addition, these sites are emerging as a place for scientific journals to reach broader audiences and for conversation between patients and health care providers. Patient organizations not only provide support to patients but also have begun to take advantage of social network sites as a source of patient-focused information on medical illnesses, issues, treatments, prevention, and awareness. Thousands of groups exist within these online communities, connecting individuals with similar interests and affiliations from all over the world.

Approximately 80% of adult Internet users in the United States have used the Internet to access health information. \(^5\) Given that much of this information is obtained through social networking sites, \(^11,12\) we attempted to evaluate and quantify the presence of various patient-centered and professional dermatology organizations on Facebook, Twitter, and LinkedIn and the extent of involvement of various dermatology journals on Facebook and Twitter.

Methods

To determine the impact of social media, an archived list of 102 dermatology journals currently in publication was obtained using the SCImago \(^13\) journal ranking search on May 30, 2012, with the following search criteria: medicine (subject), dermatology (subject category), all countries, 2011 (year), and no minimum citable documents. We searched each dermatology journal title on Facebook and Twitter for the presence of an account. To document the popularity and the size of the audience, the number of Facebook “likes” and the number of Twitter “followers” were documented. The websites of dermatology journals were visited to ascertain the presence of links to their respective Facebook and Twitter pages.

Visitors of Facebook pages can demonstrate support by clicking on “like,” as users of Twitter and LinkedIn can choose to be updated on the posts made by the organization by clicking on “follow” or “become a member” of the organization. The numbers of likes, followers, and members were used to quantify the popularity of each respective organization.

To locate all potential professional organizations related to dermatology, a list of terms was created, including dermatologist, dermatologist group, dermatologic surgery, dermatological, dermatology, dermatology academy, dermatology association, dermatology network, dermatology organization, and dermatology society and combinations of these terms substituting derm and skin for dermatologist. Google, Facebook, LinkedIn, and Twitter were used to search each individual term independently. In addition, dermatology Facebook, dermatology LinkedIn, and dermatology Twitter were used as search terms on Google but not on the 3 social networking sites to locate patient-centered and professional organizations.

To maximize the capture of all potential patient-centered organizations related to dermatology, a list of terms was created to include the most common chronic dermatologic conditions and the collective personal experiences of individual researchers. An alphabetical list of search terms included albinism, alopecia, atopic dermatitis, dermatology patient, dermatology support, dystrophic epidermolysis, EB, eczema, epidermolysis bullosa, hyperhidrosis, ichthyosis, melanoma, psoriasis, rosacea, skin cancer, Sturge-Weber, and vitiligo. A query of each search term was performed using Google, Facebook, LinkedIn, and Twitter independently. We did not search Google for the terms derm, dermatological, dermatologist, dermatology, skin, and skin disease, but we searched on each of the 3 individual social networking sites for these terms.

For each patient-centered or professional dermatology organization found on Google, the corresponding website was explored for links to any of the 3 social networking sites. Results were evaluated, and the relevant patient organizations located on any of the 3 social networking sites were recorded. When we found a relevant patient organization on 1 social network, we added that organization’s title as a search term and cross-referenced it for existence on the other 2 sites.

Searches were performed on July 17, 2012. Results were categorized in a commercially available spreadsheet application (Excel; Microsoft, Inc) and sorted in order of descending popularity. The popularity of dermatology-related patient-centered organizations was assessed using the metric of each social network site for measuring popularity, that is, the numbers of likes, followers, and members on LinkedIn, in an attempt to make the data sets comparable across all 3 sites. follower and member from LinkedIn were combined into members to represent both subpopulations.

Results

Of the 102 dermatology journals ranked by SCImago, \(^13\) only 12.7% were present on Facebook and 13.7% on Twitter. A list of the 10 most popular dermatology journals based on Facebook likes and Twitter followers is presented in Table 1. The Journal of the American Academy of Dermatology garnered the
Table 1. Popular Dermatology Journals on Social Media on July 17, 2012*  

<table>
<thead>
<tr>
<th>Journal</th>
<th>Facebook No. of Likes</th>
<th>Twitter Journal</th>
<th>Facebook No. of Followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal of the American Academy of Dermatology</td>
<td>1747</td>
<td>Dermatology Times</td>
<td>3069</td>
</tr>
<tr>
<td>JAMA Dermatology</td>
<td>716</td>
<td>JAMA Dermatology</td>
<td>2283</td>
</tr>
<tr>
<td>Journal of Clinical &amp; Experimental Dermatology Research</td>
<td>589</td>
<td>Dermatology Online Journal</td>
<td>1488</td>
</tr>
<tr>
<td>Journal of Dermatology Nurses’ Association</td>
<td>266</td>
<td>Journal of Cosmetic Dermatology</td>
<td>393</td>
</tr>
<tr>
<td>Journal of Cosmetic Dermatology</td>
<td>227</td>
<td>Journal of Dermatology Nurses’ Association</td>
<td>343</td>
</tr>
<tr>
<td>Cutis</td>
<td>172</td>
<td>Journal of Clinical &amp; Experimental Dermatology Research</td>
<td>167</td>
</tr>
<tr>
<td>Indian Journal of Dermatology</td>
<td>149</td>
<td>Actas Dermo-Sifilograficas</td>
<td>130</td>
</tr>
<tr>
<td>American Journal of Clinical Dermatology</td>
<td>109</td>
<td>Practical Dermatology</td>
<td>87</td>
</tr>
<tr>
<td>Practical Dermatology</td>
<td>92</td>
<td>Acta Dermato-Venereologia</td>
<td>81</td>
</tr>
<tr>
<td>Journal of Investigative Dermatology</td>
<td>54</td>
<td>Cutis</td>
<td>25</td>
</tr>
</tbody>
</table>

* On October 6, 2013, the 3 most liked dermatology journals on Facebook were the Journal of Investigative Dermatology with 6481 likes, Journal of the American Academy of Dermatology with 5286 likes, and JAMA Dermatology with 1862 likes, and the 3 dermatology publications with the most followers on Twitter were Dermatology Times with 6831 followers, JAMA Dermatology with 4380 followers, and Dermatology Online Journal with 2501 followers.

Table 2. Popular Professional Dermatology Groups and Trade Publication on Social Media on July 17, 2012*  

<table>
<thead>
<tr>
<th>Organization</th>
<th>Facebook No. of Likes</th>
<th>Twitter Organization</th>
<th>Facebook No. of Followers</th>
<th>LinkedIn Organization</th>
<th>LinkedIn No. of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>dermRounds Dermatology Network</td>
<td>11 251</td>
<td>dermRounds Dermatology Network</td>
<td>2900</td>
<td>Dermatology/aesthetic/plastic surgery sales or marketing</td>
<td>4999</td>
</tr>
<tr>
<td>American Academy of Dermatology</td>
<td>4826</td>
<td>Skin &amp; Allergy News Digital Network</td>
<td>2798</td>
<td>American Academy of Dermatology</td>
<td>3856</td>
</tr>
<tr>
<td>Associated Skin Care Professionals</td>
<td>2243</td>
<td>American Society for Dermatologic Surgery Association</td>
<td>1744</td>
<td>Associated Skin Care Professionals</td>
<td>2975</td>
</tr>
<tr>
<td>Skin &amp; Allergy News</td>
<td>1942</td>
<td>American Academy of Dermatology</td>
<td>1517</td>
<td>The Dermatologist</td>
<td>2482</td>
</tr>
<tr>
<td>Dermatology Nurses’ Association</td>
<td>1077</td>
<td>Dermatology Nurses’ Association</td>
<td>1471</td>
<td>Global Aesthetic Dermatology &amp; Cosmetology Group</td>
<td>1946</td>
</tr>
<tr>
<td>Society of Dermatology Physicians Assistants</td>
<td>1066</td>
<td>The Dermatologist</td>
<td>1318</td>
<td>Acne Specialists</td>
<td>1794</td>
</tr>
<tr>
<td>American Society for Dermatologic Surgery Association</td>
<td>669</td>
<td>Society of Dermatology Physician Assistants</td>
<td>1016</td>
<td>Dermatologist Network</td>
<td>1421</td>
</tr>
<tr>
<td>Canadian Dermatology Association</td>
<td>609</td>
<td>American Society for Dermatologic Surgery Association</td>
<td>644</td>
<td>Dermatology Professional Connection</td>
<td>954</td>
</tr>
<tr>
<td>The Dermatologist trade journal</td>
<td>456</td>
<td>Association of Dermatology Administrators &amp; Managers</td>
<td>308</td>
<td>American Society for Dermatopathology</td>
<td>760</td>
</tr>
<tr>
<td>American Society of Cosmetic Dermatology and Aesthetic Surgery</td>
<td>182</td>
<td>Canadian Dermatology Association</td>
<td>255</td>
<td>Dermatology Nurses’ Association</td>
<td>170</td>
</tr>
</tbody>
</table>

* Dermatology News Daily and The Social Dermatologist were not gauged in the original search but show high Facebook popularity on October 6, 2013, with 28,770 and 171,121 likes, respectively. Separately, and of undetermined significance, it was also discovered on October 6, 2013, that some websites advertised obtaining additional Facebook likes for as little as $0.03 per like (http://www.facebookchampions.com/buy-facebook-fans/).

Discussion  
Overall, our results demonstrate a variety of dermatology journals and dermatology-related professional and patient-centered organizations currently using social networking sites.
However, journals tend to lag behind organizations in terms of a presence on social networks.

The dearth of scientific journals with an online outlet is notable given that academic journals are facing tighter budgets and increasing costs involved with academic communication. Recognizing the potential that social networks offer, scientific journals in other fields, such as general medicine, have embraced online social networks as a digital community platform for dissemination of information and a bulletin for the exchange of ideas and updates on new scientific knowledge. The Lancet boasts an astounding 93,946 combined Facebook and Twitter users, which pales in comparison with the king of social media, the New England Journal of Medicine, with a staggering 401,895 followers and likes in its collective social network.

Dermatology journals and professional organizations have the opportunity to capitalize on the extraordinary potential these sites offer. Social media exemplified by Facebook and Twitter allow a more fluid and interactive collaboration of ideas. For example, Facebook can be used to post Tables of Contents, specific articles, online-first publications, updates, news regarding prominent clinical trials, and media articles. Users can have direct communication with the journals, while authors can post commentary and reply to readers in real time. Twitter is useful in disseminating short and specific topics to the public by allowing instant access to a variety of topics and offers journals the chance to be a source of timely and interesting commentary. Social media also offer an outlet for journals to provide mass access to content through media forums and encourage readers to explore the journal.

Professional dermatology organizations appear to have a significant presence on various social networks and are relatively more prevalent on Facebook and LinkedIn than on Twitter. This finding may reflect the more recent establishment of Twitter in 2006 compared with LinkedIn and Facebook, which were established in 2003 and 2004, respectively. Three of the top 10 professional dermatology organizations (American Academy of Dermatology, Dermatology Nurses’ Association, and The Dermatologist) were found on all 3 social media websites, and an additional 7 professional dermatology organizations (dermRounds Dermatology Network, Associated Skin Care Professionals, Skin & Allergy News Digital Network, Society of Dermatology Physician Assistants, American Society for Dermatologic Surgery Association, Canadian Dermatology Association, and The Dermatologist) were found on 2 of the 3 social media websites.

Social networking sites, such as Facebook, LinkedIn, and Twitter, are becoming important for the management of a rapidly evolving body of medical information that health care professionals must access. Multiple benefits allow dermatology-related organizations to participate in social networking. The tangible benefits of participating in social networks include an increased e-mail database, free public service announcements, fund-raising opportunities, recruitment of new members and supporters, and attraction of new advertising dollars and donations. These organizations can assess the impact of social media networking by monthly performance reviews evaluating referrals to their website from social media sites; tracking their connections, viewers, and commentators; evaluating growth of their e-mail contacts; and checking individual site metrics, such as Facebook likes and shares or Twitter followers. Additional benefits include broadening advocacy, raising community awareness, engaging members of the community, generating discussions, and attracting recognition and media attention. Although the positive financial effect of social media networking could be extensive for efforts such as increasing fundraising, attracting donors, or expanding advertising revenue, it remains largely unexplored and could provide greater incentive for organizations to become involved and remain active on these sites.

Last, dermatology-related patient-centered organizations are more active on Facebook and, to a lesser degree, Twitter, compared with LinkedIn. We found significant overlap between the organizations that actively use social networking sites given that the top 3 active organizations on Facebook (the Skin Cancer Foundation, National Psoriasis Foundation, and Melanoma Research Foundation) are among the top 10 most active on Twitter and LinkedIn. The preferential use of Facebook and Twitter may be explained by the fact that these sites allow patients to share personal clinical information, request specific guidelines and feedback, and receive emotional support. In addition to sharing many of the benefits available to dermatology...
ogy journals and professional organizations, social networking sites can also be especially important sources of knowledge and ongoing support for patients living with chronic diseases.  

Conclusions

Although social networking sites have become widely used sources of information and support for patients, their potential utility for professionals should not be overlooked. Use of social networking sites allows journals and professional organizations the opportunity to provide an up-to-date stream of information and to create a platform for health care providers to communicate, share knowledge, and discuss care. Social networking sites provide the chance to develop relationships and conversations without the formality and investment demanded by conventional publishing of medical literature and health care news.

With continued technological evolution, organizations that fail to recognize the opportunity provided by social networking sites risk becoming marginalized by their inability to assimilate to social media as an expected form of communication. As social networking sites continue to attract more active users in search of health information, those able to use this tool efficiently stand to benefit significantly.

**ARTICLE INFORMATION**

**Accepted for Publication:** June 10, 2013.
**Published Online:** November 6, 2013.
**doi:**10.1001/jamadermatol.2013.6340.
**Author Affiliations:** A medical student at the School of Medicine, University of Colorado, Aurora (Amir); currently with the Department of Medicine, Exempla St Joseph Hospital, Denver, Colorado (Amir); medical student at the School of Medicine, University of Washington, Seattle (Sampson); currently serving a University of Washington Department of Internal Medicine Boise Internal Medicine Residency, Boise, Idaho (Sampson); medical student at the Midwestern University College of Osteopathic Medicine, Glendale, Arizona (Endly, Henley); currently with the Department of Internal Medicine, Banner Good Samaritan Medical Center, Phoenix, Arizona (Endly); medical student at the School of Medicine, University of Hawaii, Honolulu (Tamai); currently with the Department of Internal Medicine, University of Southern California, Los Angeles (Tamai); currently with the Department of Medicine, Loyola University Medical Center, Maywood, Illinois (Henley); medical student at the College of Medicine, University of Arizona, Phoenix (Brewer); currently serving a transitional year residency, Mayo Clinic, Scottsdale, Arizona (Brewer); Department of Dermatology, School of Medicine, University of Colorado, Aurora (Dunn, Dunnick, Dellavalle); Dermatology Service, Department of Veterans Affairs Medical Center, Denver, Colorado (Dellavalle); Department of Epidemiology, Colorado School of Public Health, Aurora (Dellavalle).

**Author Contributions:** Drs Amir and Dellavalle had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Sampson, Endly, Henley, Dunn, Dellavalle.

Acquisition of data: Sampson, Endly, Tamai, Henley, Brewer. 

Analysis and interpretation of data: Amir, Sampson, Endly, Tamai, Henley, Dunn, Dunnick, Dellavalle.

Drafting of the manuscript: Amir, Sampson, Endly, Tamai, Henley, Brewer.

Critical revision of the manuscript for important intellectual content: Amir, Sampson, Endly, Tamai, Henley, Dunn, Dunnick, Dellavalle.

Statistical analysis: Sampson, Endly, Tamai, Dunn.

Administrative, technical, and material support: Endly, Dunn.

Study supervision: Dellavalle.

Conflict of Interest Disclosures: Dr Dellavalle is employed by the US Department of Veterans Affairs. No other disclosures were reported.

**Disclaimer:** The opinions expressed in this letter represent the views of the authors and not of the US government.

**REFERENCES**


