

Electronic Collaboration in Dermatology Resident Training Through Social Networking

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PRACTICE POINTS

- Educational collaboration between residency programs via social media can result in more well-rounded dermatologists, which will enhance patient care.
- Social media can connect dermatologists nationwide to improve patient care via collaboration.

The use of online educational resources and professional social networking sites is increasing. The field of dermatology is currently underutilizing online social networking as a means of professional collaboration and sharing of training materials. In this study, we sought to assess the current structure of and satisfaction with dermatology resident education and gauge interest for a professional social networking site for educational collaboration. Two surveys—one for residents and one for faculty—were electronically distributed via the American Society for Dermatologic Surgery and Association of Professors of Dermatology (APD) listserves. The surveys confirmed that there is interest among dermatology

residents and faculty in a dermatology professional networking site with the goal to enhance educational collaboration.

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More than 1.8 billion individuals utilize social media, a number that continues to grow as the social media market expands.¹ Social media enables individuals, groups, and organizations to efficiently disperse and access information²⁻⁴ and also provides a structure that encourages collaboration between patients, staff, and physicians that cannot be achieved by other communication modalities.⁴⁻⁶ Expert opinions and related educational materials can be shared globally, improving collaboration between dermatologists.⁶ A structured social networking site for sharing training materials, research, and ideas can help bring the national dermatology community together in a new way.

Other professions have employed social networking tools to accomplish similar goals of organizing training resources; radiology has an electronic database that allows sharing of training materials and incorporates social networking capabilities.⁷ Their Web software provides functionality for individual file uploading and supports collaboration and sharing, all while maintaining the security of uploaded

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information. General surgery has already addressed similar concerns via a task force that incorporates all the essential organizations in surgical education.⁸ Increased satisfaction and academic abilities have been demonstrated with their collaborative curriculum.⁹ Gastroenterologists also utilize electronic resources; one study showed that using videos to educate patients prior to colonoscopies was superior to face-to-face education.¹⁰ In addition, video education may free up time for office staff to accomplish other tasks.

As a specialty, dermatology has not been a leader in the implementation of social networking for collaboration and training purposes. Every dermatologist is an educator. To maintain a successful practice, dermatologists must keep up-to-date on their own clinical knowledge, provide training to their staff, and educate their patients. Although there are numerous educational resources available to dermatologists, an informal survey of 30 dermatology faculty members revealed a practice gap in awareness and utilization of these expanding electronic resources.¹¹

To better understand the needs of the specialty as a whole, we chose to focus on one aspect of dermatology education: resident training. The goal of our study was to survey dermatology residents and faculty to gain a better understanding of how they currently provide education and what online resources and social networking sites they currently use or would be willing to use. The study included 3 central hypotheses: First, residents would be less satisfied with their current curriculum and residents would report greater contributions to the curriculum relative to faculty. Second, both residents and faculty of smaller programs would be more interested in collaborative educational resources relative to larger programs. Lastly, residents would be more willing than faculty to participate in social networking for educational purposes.

Methods

This study was granted institutional review board exemption. Two surveys were developed by the authors to assess the current structure and satisfaction of dermatology residency curriculum and the willingness to participate in social networking to use and share educational materials. The surveys were evaluated for relevance by the survey evaluation team of the Association of Professors of Dermatology (APD). The instrument was not pilot tested.

The surveys were electronically distributed using an online service to dermatology faculty via the APD listserv, which comprised the entirety of the APD membership in 2014. The resident survey

was distributed to the dermatology residents via the American Society for Dermatologic Surgery listserv, which included all residents in training (2013-2014 academic year). Second and third invitations to complete the surveys were distributed 3 and 5 weeks later, respectively.

Resident and faculty responses were compared. Additionally, responses were stratified for large (>9 residents) and small programs (≤9 residents) for comparison. Descriptive statistics including means and medians for continuous variables and frequency tables for categorical variables were generated using research and spreadsheet software.

Results

There were 137 survey respondents; 52 of 426 (12.2%) dermatology faculty and 85 of 1539 (5.5%) dermatology residents responded to the survey. Small programs accounted for 24% of total survey responses and 76% were from large programs.

Current Curriculum—The majority of dermatology faculty (44%) and residents (35%) identified 1 to 2 faculty members as contributing to the creation and organization of their respective curricula; however, a notable percentage of residents (9%) reported that no faculty contributed to the organization of the curriculum. Residents noted that senior residents carry twice the responsibility for structuring the curriculum compared to faculty (61% vs 32% of the workload), but faculty described an even split between senior residents and faculty (47% vs 49% of the workload). Faculty believed their residents spend a similar amount of time in resident- and faculty-led instruction (38% vs 35% of their time); however, the majority of residents reported spending too little time in faculty-led instruction (53%). When residents ranked their preference for learning modes, faculty-led and self-study learning were ranked first and second by 48% and 45% of residents, respectively. Resident-led instruction was ranked last by 66% of residents. Likewise, a majority of residents (53%) described their amount of time in faculty-led instruction as too little.

When asked what subjects in dermatology were lacking at their programs, residents reported clinical trials (47%), skin of color (46%), cosmetic dermatology (34%), and aggressive skin cancer/multidisciplinary tumor board (32%). Although 11% of residents reported lacking inpatient dermatology in their curriculum, 0% of faculty reported the same. A notable percentage of faculty reported nothing was lacking compared to residents (25% vs 7%). Despite these different views between residents and faculty on their contributions to and structure of their curriculums, both faculty and residents claimed overall satisfaction (satisfied or very

satisfied) with their program's ability to optimally cover the field of dermatology in 3 years (100% and 91%, respectively).

Large Versus Small Residency Programs—When stratifying the resident responses for small versus large programs, both program sizes reported more time in resident-led instruction than faculty-led instruction. Likewise, residents in both program sizes equally preferred self-study or faculty-led instruction to resident-led instruction. Residents at small programs more often reported lacking instruction in rheumatology, immunobullous diseases, and basic science/skin biology compared to large-program residents. Compared to large-program faculty, small-program faculty reported lacking instruction in cosmetic dermatology.

Faculty at small programs reported spending too little time preparing for their faculty-led instruction compared to faculty at large programs (44% vs 12%). All (100%) of the faculty at small programs were likely to seek out study materials shared by top educators, while 77% of faculty at large programs were likely to do the same. When asked if faculty would translate what their program does well into an electronic format for sharing, 30% of large-program faculty were likely to do so compared to 11% of small-program faculty (Figure 1).

Use of Online Educational Materials and Interest in Collaboration—A majority of faculty and residents stated that they use online educational materials as supplements to traditional classroom lecture and print materials (81% vs 86%); however, almost twice as many residents stated that online educational materials were essential to their current study routines compared to faculty (39% vs 21%).

The majority of faculty (92%) and residents (84%) were either interested or very interested in a collaborative online curriculum. Both residents

(85%) and faculty (81%) stated they would be likely to seek out online educational materials shared by top educators. Although both residents and faculty reported many aspects of their curriculums they thought could be beneficial to other dermatology programs (Table 1), only 27% of faculty and 19% of residents were likely to translate those strengths into a shareable electronic format. Several reasons were reported for not contributing to an online curriculum, with lack of time being the most common reason (Table 2).

Eighty percent of residents and 88% of faculty reported they were either interested or very interested in being more connected/interactive with their dermatology peers nationally (Figure 2). Likewise, 94% of residents and 87% of faculty agreed that the dermatology community could benefit from a social networking site for educational collaboration. Four times as many residents versus faculty currently use social networking sites (eg, Facebook, LinkedIn, Google Groups) as a primary mode of communication with distant professional peers. The majority of residents (52%) reported they would be likely to participate in a professional social networking site, while the majority of faculty (50%) stated they were neutral on their likelihood of participating. Both residents and faculty reported lack of time as a common reason for being unlikely to utilize a professional social networking site. Other barriers to participation are listed in Table 3.

Comment

This study showed how dermatology faculty and residents currently provide training and what online resources and social networking sites they currently use or would be willing to use. The generalizability of the conclusions is limited by the low response rate for the surveys. The results demonstrated

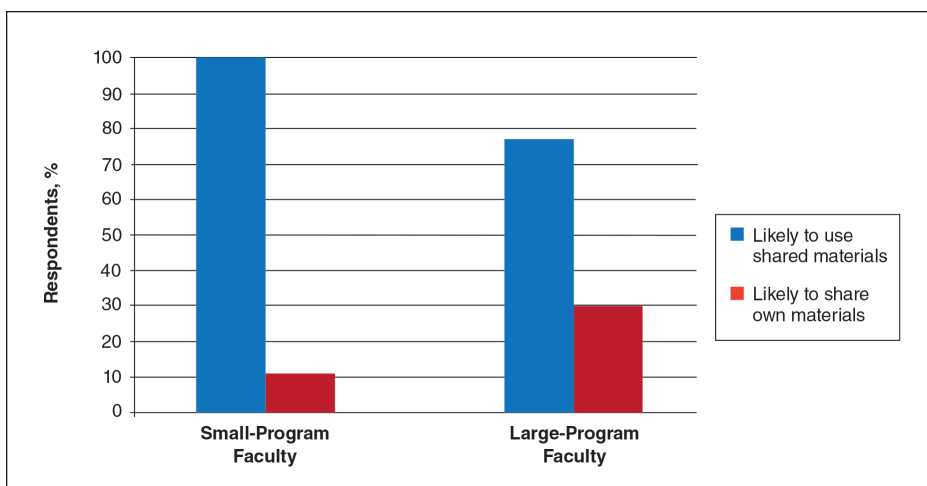


Figure 1. Responses of small- and large-program faculty regarding using and sharing educational materials.

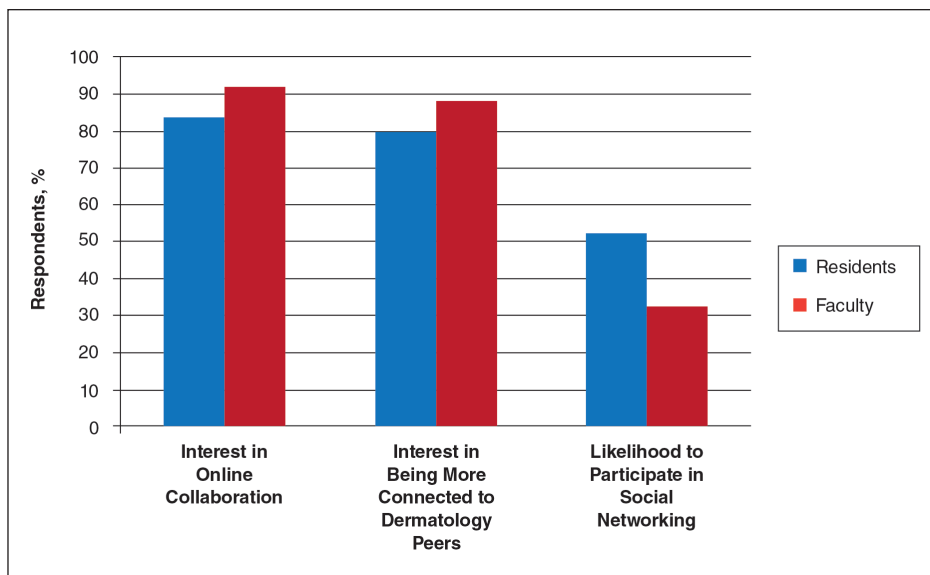


Figure 2. Responses of dermatology residents and faculty regarding their interest in online collaboration, professional communication, and social networking within the specialty.

Table 1.

Reported Strengths That Could Be Beneficial to Other Dermatology Programs

Strength	No. of Responses
Dermatologic surgery curriculum	21
Dermatopathology curriculum	19
Pediatric dermatology curriculum	13
Didactic lectures	12
Textbook reviews/journal club	11
Kodachrome/virtual slides	8
Board review/study tools	7
Dermatoethics program	2
Business and leadership curriculum	2
Quality and patient safety curriculum	2
Toxic medication handling	2
Cosmetic dermatology curriculum	2
Case studies	2

the different views between faculty and residents and between large and small residency programs on various topics. This microcosm of dermatology training can likely be applied to other training scenarios in dermatology, including patient education; training of nurses, physician extenders, and office staff; continuing medical education for physicians; and peer-to-peer collaboration.

Hypothesis 1: Partially Proven—We hypothesized that residents would report less satisfaction with their current curriculum and would report greater resident contributions to the curriculum relative to faculty. Overall, residents and faculty reported satisfaction with their curriculums to provide up-to-date information and breadth in the field of dermatology. Despite their overall satisfaction, more residents reported lacking instruction in several dermatology subtopics compared to faculty. Additionally, residents believed they spend twice as much time structuring their curriculum compared to faculty, with some residents reporting no faculty involvement. Although residents preferred faculty-led instruction, a majority of residents reported they do not have enough faculty-led didactics. The preference for faculty-led training is likely due to the expertise of faculty compared to residents.

Hypothesis 2: Partially Proven—We also hypothesized that both residents and faculty of smaller programs would be more interested in collaborative educational resources relative to larger programs. Although there was no difference in interest between residents at small versus large programs, there was a difference between faculty at small versus large programs. Small-program faculty were more

Table 2.

Reported Barriers to Translating Personal Educational Materials Into Shareable Electronic Format

Barrier	No. of Responses
Lack of time	12
HIPAA concerns	3
Lack of materials to share	3
Too difficult to translate into electronic format	3

Abbreviation: HIPAA, Health Insurance Portability and Accountability Act.

interested in using shared materials than larger programs, while large-program faculty were more likely to share their educational materials. Small-program faculty reported spending too little time preparing their lectures, which is possibly due to a lack of time for preparation. Additionally, residents and faculty at smaller programs report their curriculum was lacking specific dermatology topics compared to large programs. These disparities between program sizes indicate a need for a social networking site for training collaboration in dermatology. Large programs have the ability to share what they do well, which small programs are eager to utilize.

Hypothesis 3: Not Proven—We hypothesized that residents would be more willing than faculty to participate in social networking for educational purposes. The majority of faculty and residents were interested in participating in a collaborative online curriculum and using the shared materials from top educators; however, even though such large majorities favored collaboration and sharing, only 27% of faculty and 19% of residents were likely to translate their own materials into a shareable format. Although lack of time was the most common reason for not sharing materials, electronic methods may have the potential to ultimately save time and remove the burden of content creation. The time it would take to translate selected personal training materials into a shareable form would be made up for by the time saved using another educators' materials. Updating and customizing shared online educational materials can be much quicker and easier than educators creating materials on their own. Dermatologists would be more efficient facilitators of training via high-quality shared materials while decreasing the time burden associated with

Table 3.

Reported Barriers to Participating in a Professional Social Networking Site

Barrier	No. of Responses
Lack of time	9
Do not participate in social media	5
Concerns for information security	4
Participate in too many social networking sites already	3
Burden of learning how to use a social networking site	1

resident education.⁵ Another concern for not sharing or participating in a social networking site was skepticism of information security on such a network. The poor organization and information overload of online resources can compound the already existing time constraints on dermatologists, which may limit their ability to utilize such valuable resources. In addition, quality of online resources is not always guaranteed, and determining the sources that are high quality is sometimes a difficult task.⁶ For online materials to remain useful, there should be a peer-review process to evaluate quality and assess satisfaction.⁵

Solution: Create a Dermatology Task Force—A dermatology task force could facilitate the resolution of these challenges of online materials. In addition, a task force could cover the administrative support needed to ensure security and provide maintenance on social networks.

The main limitation to implementing a social network is the presence of the administrative infrastructure to jumpstart its creation. A task force incorporating the essential stakeholders in dermatology training is the first step. With inclusive representation from all of the smaller professional dermatology societies, the American Academy of Dermatology is optimally positioned to create this task force. With existing information technologies, a task force could address the concerns revealed in our survey as well as any future concerns that may arise.

The goal is a single social network for dermatologists that has the capability of improving communication and collaboration between professional peers regardless of their practice setting. Such a network is ideal for the practicing dermatologist for the purposes of staff training, patient education, and obtaining continuing

medical education credit. Additionally, peer group collaboration would facilitate the understanding and completion of the evolving requirements for Maintenance of Certification from the American Board of Dermatology. The availability of quality shared materials would save time and increase efficiency of an entire dermatology practice. Materials that aid in patient education would allow office staff to dedicate their time to other tasks, thereby increasing productivity. Shared training materials would decrease the burden of staff education, providing more time for advanced hands-on training. This method of collaborative effort is capable of advancing the field of dermatology as a whole. It can overcome geographical and institutional barriers to connect dermatologists with similar interests worldwide; disseminate advances in diagnosis and treatment; and improve the quality of dermatology training of dermatologists, staff, and patients.

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