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Incorporating social media into dermatologic education

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Abstract

In the current digital age, medical education has slowly evolved from the largely lecture-based teaching style of the past to incorporate more interactive pedagogical techniques, including use of social media. Already used readily by millennial trainees and clinicians, social media can also be used in innovative ways to teach trainees and facilitate continuing education among practicing clinicians. In this commentary, we discuss many learning benefits of social media and review potential pitfalls of employing social media in both trainee and physician dermatological education

Keywords: social media, medical education, active learning

Introduction

Social media, which has infiltrated popular culture over the past decade, is a broad term referring to online tools that allow for widespread creation and dissemination of user-generated content. Approximately 90% of medical students use at least one social media application and, not surprisingly, there are growing efforts to use social media platforms to promote learning in medical education [1]. Though social media use tends to be higher among trainees than faculty, it is also gaining traction as a novel learning tool for continuing education with practicing physicians in all specialties, including dermatology. Because many social media platforms are free and inherently designed to promote collaboration, they can often be re-purposed to promote learning in a variety of settings. Herein, we

review the learning benefits and professionalism considerations when using social media as a learning tool within dermatology.

Learning benefits of social media

Social media has enabled trainees, physicians, and even patients to access and participate in international learning communities [2]. For example, popular dermatology professional groups (e.g. American Academy of Dermatology, DermRounds, VisualDx, and various dermatological journals) are using platforms like Facebook, Twitter, Doximity, and LinkedIn to generate online educational discussions among trainees and physicians [3, 4, 5]. In addition, many private dermatology offices and patient advocacy groups use Instagram, a primarily photo-sharing platform with a large predominantly younger demographic [6].

Using social media, dermatologists can, for example, share clinical images, pathology slides, and case reports in a virtual "grand rounds" to discover diagnostic and management considerations not otherwise realized in traditional formats [7, 8]. With regard to patient education, cross-talk between patients and dermatologists is also occurring in "direct-to-consumer" teledermatology social media apps and websites. However, the quality of diagnoses using these platforms is not well-established and the value of patient education and diagnosis using social media continues to be an area of investigation [9,10]. Further, patients increasingly seek health information on the internet and dermatologists have evaluated various dermatologic websites and found that they are relatively accurate and complete [11]. Nevertheless, discretion is warranted as not

all sources are peer-reviewed and the sites require quality control on a case-by-case basis [12].

In the classroom, social media that has been used to make lectures more engaging (e.g. for audience polling and instructor feedback) is generally well-received by medical students [7, 13, 14]. In one example, Northeast Ohio Medical School, after noticing decreased class attendance, introduced once weekly Google Forms dermatology quizzes on Twitter to foster motivational competition among medical students. A study on its utility found that these optional quizzes increased online interactions between students and faculty and served as helpful exam study material [15]. At another medical school, a dermatology interest group blog was created to promote communication and collaboration between students, faculty, residents, and alumni. A survey of its subscribers found that the blog and its web-based tools were valuable resources for students, who found that it communicated educational opportunities and fostered mentorship [16].

Given the variable clinical schedules of trainees, social media also provides an added advantage of “anywhere, anytime” access and can be used in facilitating online journal clubs or internet based forums [17]. Although it is unlikely that social media can be used in sole exclusion of other didactics, it may serve as an innovative supplement to traditional didactic experiences such as lectures and small-group discussions. In fact, social media’s role in resident education may expand given work hour restrictions that limit trainee ability to participate in in-person sessions and conferences, leaving a vacuum of educational opportunity that social media platforms may fill [13].

Table 1 outlines a non-comprehensive list of social media platforms that allow sharing of multimedia (e.g. videos, podcasts, images) as well as text files. We offer practical suggestions on how to use them to promote peer and trainee learning within dermatology.

Because many studies about social media use in medical education are single institution case reports, future studies using controlled designs and more behavioral outcome measures (e.g. clinical

assessment, patient outcomes) are necessary to understand if more substantive learning benefits are associated with social media use. One recent meta-analysis concluded that social media use in medical education is associated with affective learning benefits (i.e. high degrees of satisfaction and engagement), [18].

Case Discussion

Digital professionalism

Despite its vast potential to enhance learning, the use of social media must be weighed against professionalism considerations. In recent years, popularity of social media among clinicians and trainees has illuminated privacy and professionalism breaches and led to thousands of violations of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), a federal law introduced to ensure protect patient information. Simply put, the same rules regarding patient privacy that apply to all aspects of patient care also apply to use of social media. The most commonly investigated HIPAA violations are impermissible uses and disclosures of protected health information (PHI) and lack of safeguards of PHI [19]. An example of a HIPAA violation particularly relevant for dermatologists is photographing patient rashes on unencrypted devices and posting such photos online without patients’ written consent. In fact, many journals now require written consent for patient images, even if non-identifiable, to be used in case reports. Once violations are identified, they are investigated by the Office for Civil Rights of the U.S. Department of Health and Human Services. Fines range between \$100 and \$50,000 per violation (annual maximum of \$1.5 million) depending on the nature of the infraction and extent of harm resulting from it [20]. To optimize digital professionalism and avoid HIPAA violations, we recommend using an up-to-date case-based approach to proactively discuss institutional-specific guidelines and best practices about patient confidentiality and professionalism prior to encouraging use of social media, particularly among trainees. A prior study at our institution suggests that erosion of professionalism can still occur despite formal didactic sessions, suggesting that educational interventions should be repeated regularly [21]. Key topics and learning goals of case-based sessions should include:

Table 1. A non-comprehensive overview of social media platforms and their educational applications

Platform (s)	Key Features (and platform examples)	Educational Uses	Learning benefits	Pitfalls
Twitter	Online social networking platform in which users post and read 140 character "tweets"	<p>Live twitter chat: Students can "post" live questions during a lecture. This screen can be showed on a PowerPoint presentation and/or online twitter stream.</p> <p>Twitter quizzes: At the end of lectures, instructors can use Twitter quizzes and polls to check for understanding.</p> <p>Twitter chat: Instructors may use this modality as a valuable, cost effective way to include students that were not able to make it to the lecture in person.</p> <p>Twitter polls: Professors used twitter polls to get real-time feedback on their teaching styles.</p> <p>Tweets: Instructors can "tweet" links about current media stories and clinical applications of a recent lecture.</p>	<ul style="list-style-type: none"> - Live twitter chat in a dual stream (showing twitter chat adjacent to lecture slides) on one large display may increase learner attention during lectures [19] - Twitter quizzes and polls may be easier to use than standard clicker devices because students need only a device with internet connection - Real time checks for understanding give professors an opportunity to address learner misconceptions - Twitter chat engages students unable to attend lecture in person - Twitter polls to evaluate teacher feedback allows the educator to adjust his/her practice for the next session, rather than wait for end-of-course evaluations - Tweeting course-based material contextualizes the information and facilitates a more dynamic dialogue between instructor and learners [3] 	<ul style="list-style-type: none"> - Character limit may restrict complexity of conversation - Dual stream can result in an imbalance of cognitive load
Video Chat (e.g. Skype, Google Video)	Applications providing video chat and voice call services	<p>Video calls: Connect students to a live discussion with experts located at other hospitals or institutions, nationwide and abroad.</p> <p>Example: In a dermatology lecture aimed at 2nd year medical students in California, Skype could be used to consult physician experts in the New England region about identifying the cutaneous findings in Lyme Disease.</p>	<ul style="list-style-type: none"> - Students have found that live discussions with experts enhances their understanding of specialized content [3] - Video chat provides a free and easy method to share interesting cases, research, and strategies between trainees and clinicians, regardless of their geographical location. 	<ul style="list-style-type: none"> - Video calls require prior coordination and planning between participants
Video sharing (e.g. YouTube, Vimeo)	Video sharing websites allowing users to upload, view, share, and rate/comment on videos.	<p>Video sharing: Links to videos can be disseminated, or original videos can be uploaded to demonstrate concepts that are difficult to describe verbally or pictorially. Playlists can also be made for a collection of several related videos.</p> <p>Example: First-year dermatology residents watch videos pre-recorded by instructors about electrodesiccation and curettage techniques.</p>	<ul style="list-style-type: none"> - Incorporating various forms of media may be helpful for students who enjoy audiovisual learning modalities - Videos are well received and found to be useful by medical students and residents alike who wish to master procedural techniques [20] 	<ul style="list-style-type: none"> - Finding the most useful and appropriate videos can be time-consuming and quality of content may be variable

Platform (s)	Key Features (and platform examples)	Educational Uses	Learning benefits	Pitfalls
<p>File Storage and Synchronization Services (e.g. Google Drive, Office 365, Dropbox, Box, OneDrive)</p>	<p>Any website or application which can upload and share files among users.</p>	<p>Physicians can share educational articles, live documents, videos, and photos with their students or their colleagues.</p> <p>Example: Questions can be posted before, during, or after dermatology grand rounds on a live synchronized document, allowing students of all levels (medical students, residents, attendings) to more fully engage with each other.</p>	<ul style="list-style-type: none"> - Provides an embarrassment free setting in which students of all levels of training can ask questions and partake in discussion [12] - Like Twitter, starting forms can garner both teacher feedback and address lingering student misconceptions, both of which can inform future practice and content - Students report that file sharing services augment their engagement in the learning material and their collaboration with other learners [3] 	

1. **Confidentiality:** When describing clinical encounters, remove all identifying information that may jeopardize the privacy of the patient, other physicians, or colleagues. It is unethical to post photos of clinical encounters because this is a breach of privacy unless sanctioned. It is good practice for all trainees and clinicians to review institution-specific guidelines on best practices for use of social media and the repercussions of inappropriate online behavior.

2. **Online Identity:** Profanity, depiction of substance use, and discriminatory language are common in social media use. Because online identity will reflect on one’s professional identity, it is important to abstain from public display of these behaviors.

3. **Patient-Doctor Relationship:** Avoid accepting “friend requests” and “follow requests” from any patients or their families. If this is unavoidable, consider having a professional online identity that is separate from an online identity used for personal interactions.

Relationship with Colleagues

Respect your fellow colleagues and do not publicize frustrations. Practice “thinking before posting” to avoid publication of inappropriate content. Follow a formal institution-specific process to address mistreatment, if necessary.

Conclusion

Although there are important professionalism and

privacy limitations to consider when using social media, it is an innovative means to connect an international community of trainees and physicians to facilitate educational discussions and networking opportunities. More research needs to be done to understand if and how learning with use of social media can impact patient outcomes, but for now, it remains a highly-rated tool to engage trainees and physicians alike in “anytime, anywhere” education and networking. Social media also has the potential to revolutionize patient education through delivery of information intended to improve patient adherence to treatment or prophylactic measures such as skin self-checks.

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