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# Social Media and Professional Development for Oncology Professionals

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## abstract

The use of social media continues to increase in health care and academia. Health care practice, particularly the oncologic field, is constantly changing because of new knowledge, evidence-based research, clinical trials, and government policies. Therefore, oncology trainees and professionals continue to strive to stay up-to-date with practice guidelines, research, and skills. Although social media as an educational and professional development tool is no longer completely new to medicine and has been embraced, it is still under-researched in terms of various outcomes. Social media plays several key roles in professional development and academic advancement. We reviewed the literature to evaluate how social media can be used for professional development and academic promotion of oncology professionals.

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## INTRODUCTION

Social media comprises internet-mediated communication channels that allow an individual to create content, share messages, and exchange information and ideas via text, pictures, and videos, with the potential to reach others independent of geography and real-world relationships (Table 1). According to the Pew Research Group, 72% of US adults use social media in 2021, with more than 80%, 73%, and 45% of adults under age 50, 50-64, and 65 years and older using at least one channel, respectively.<sup>1</sup> Although the use of social media continues to increase, its value in terms of professional development and academic promotion within medicine continues to evolve. In this literature review, we discuss how various forms of social media can be used for continuous professional development and academic promotion in oncology derived from a review of the existing literature. Finally, we characterized the risks associated with social media use by oncologists and suggested ways to mitigate them.

## SOCIAL MEDIA FOR CONTINUOUS EDUCATION

Social media channels, including Twitter, have been used as forums for education by many organizations and groups. A review of the literature identified three common themes: journal clubs, engagement around conferences, and tweet chats.

Journal clubs are informal forums that rely on peer-to-peer teaching. A common theme for conducting them effectively is the informal setting in which they occur. Topf et al<sup>2</sup> explain that multiple factors make social media a natural place to conduct journal clubs: its conversational nature, ability to join from anywhere in a virtual round table, and inclusivity—allowing multiple stakeholders, from multidisciplinary clinicians and scientists to patients to advocates and industry, to discuss topics together. The data evaluating the impact of Twitter-based journal clubs are evolving but promising. The globalization of education using Twitter-based journal clubs was the subject of a systematic review in 2015.<sup>3</sup> However, only 11 papers were ultimately included (inclusive of only 24 hashtags). The authors demonstrated that the proliferation and activity of these forums increased over time, which was associated with increasing impressions (a metric that estimates the number of people who potentially see particular hashtags, tweets, or threads). In oncology, Henry et al<sup>4</sup> presented the feasibility and impact of the Heme-Onc Journal Club (#HOJournalClub) at the 2020 ASCO Annual Meeting, showing that within 1 year, it attracted more than 1,000 followers, with 50%-60% fellows participating. A survey of their participants delineated the participating fellows and informing clinical practice.

The use of social media around major cancer meetings is well established.<sup>5-8</sup> Much of this activity centers

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**TABLE 1.** Common Social Media Channels in Use<sup>1</sup>

Social Media Platform	US Adults Who Say They Ever Use (%)	Digital Media Format	Considerations for Oncology Professionals
YouTube	81	Video	High user base Creation of subscription channels for content
Facebook	69	Mixed media: text, video, and pictures	High user base Large number of private and public patient communities Live platform is available
Instagram	40	Visual media Various formats allow for video posts of different lengths	Ideal for visual content No ability to redirect user to links outside of the platform Live platform is available
Pinterest	31	Visual media (pictures or video)	Predominantly female user base Health and fitness ranks highly as a topic of interest
LinkedIn	28	Mixed media accepted	Professional networking
Snapchat	25	Video and pictures, called Snaps	Time-limited content that is meant to autodelete
Twitter	23	Microblogging site, allows for mixed media	Primary place for engagement among US-based clinicians Ability to go live enabled in 2021 (Spaces)
TikTok	21	Video	Information created as entertainment (infotainment)

around Twitter, where tweets allow for live interactivity that can help reach a broader population beyond those attending in person.<sup>9</sup> Indeed, social media activity often increases substantially around cancer-related conferences,<sup>7</sup> and the continuous growth in participation has been documented (Table 2).<sup>5-8</sup> Although the overall uptake of Twitter among conference attendees remains low, the reach of those tweeting is substantial. For example, an analysis of the Twitter activity starting one week before the European Society of Surgical Oncology 2018 annual meeting showed a 20% growth in the followers of the parent organization's Twitter account one week after the meeting concluded, suggesting that Twitter was associated with greater awareness of the organization itself.<sup>6</sup> Although these analytics are often tied to the use of the hashtag employed by a specific meeting, data suggest that these may cause an underestimation of activity. Mackenzie et al<sup>7</sup> explored the use of Twitter around the European Society of Surgical Oncology 2019 meeting (#ESSO39) and reported that a little over half (54%) of tweet activities used the hashtag.

More recent analyses of Twitter usage trends over several years have shown a continuous increase in its use. For example, between 2011 and 2016, there was a ninefold increase in tweets and an 11-fold increase in Twitter users using the conference hashtag.<sup>7</sup> Content analysis around ASCO conferences between 2016 and 2020, using the social media analytics platform Symplur, shows an increase in the number of Twitter impressions from 468.2 million in 2016 to approximately 1.12 billion in 2020.<sup>9</sup> An analysis of twitter activity generated from 2013 to 2016 American Society of Breast Surgeons Annual Meetings showed that

the Twitter user number increased by 450%, the number of tweets increased by 600%, and physician tweeter number increased by 457%.<sup>5</sup>

Third, social media provides opportunities for multiple stakeholders to discuss data and clinical priorities, allowing for discussions from various perspectives. An example of this comes from the work with the Brain Cancer Quality of Life Collaborative (BCQoLC) regarding the specialized quality-of-life needs for people with brain tumors and their caregivers.<sup>10</sup> This collaborative includes people with brain tumors, care partners, researchers, palliative care specialists, neuro-oncology providers, advocacy group leaders, and payer representatives. Using tweet chats around the brain tumor social media (#BTSM) hashtag, they effectively completed in-person panel work to address this issue. As a result, they were able to fully represent what QoL meant to this community and the need for more effective communication strategies specifically relevant to this community.

It should be noted that restrictions on the length of posts may restrict an individual's ability to fully express or expand from a specific viewpoint. Social media channels are adapting to such challenges by allowing video or audio or serial posts to be stitched together (or threads on Twitter). For those who wish to expand on an idea in a more traditional way, other online opportunities exist, such as online columns or blogs.

### **SOCIAL MEDIA, PROFESSIONAL DEVELOPMENT, AND ACADEMIC PROMOTION**

The role of social media as an acceptable metric for both professional development and academic promotion has

**TABLE 2.** Metrics of Growth on Twitter Around Major Medical Meetings

Conference	Year	Time Frame	Findings
International Society of Hemostasis and Thrombosis (ISTH) <sup>5</sup> PMID: 33733023	2020	Three days of the virtual conference	7.103 million average impressions/day 2,527 average tweets/day 1,223 total participants
European Society of Surgical Oncology (ESSO38) <sup>6</sup> PMID 30503047	2018	Week before and after ESSO38	20% growth in follower base of parent organization (@ESSOweb)
ASCO Annual Meeting <sup>7</sup>	2011-2016	Conference meeting period only	Five year trends: 11-fold increase in users Nine-fold increase in tweets
American Society of Breast Surgeons <sup>8</sup>	2013-2016	Conference period only	450% increase in the number of users 600% increase in the number of tweets 469% increase in impressions

continued to evolve. For those engaged in academic careers, both quantity and quality have been the primary and determining factors influencing advancement and academic promotion.<sup>11</sup> A novel tool that has appeared in the recent medical literature comes from the social media analytics company, Symplur, called the Healthcare Social Graph (HSG) score, representing an attempt to quantify a person's influence in the social media space.<sup>12</sup> The HSG ranks influencers in the medical space by global conversational impact over the span of 1 year. It uses three components: a social network analysis algorithm, stakeholder weighting, and an algorithm that judges the quality of conversations. In a recent study, HSG was compared with the h-index of 286 Twitter profiles (chosen by the stratified random sample), showing a weak but statistically significant correlation (Spearman correlation coefficient  $\rho$  0.1979 [ $P < .001$ ]).

The idea that social media activities can predict future citations is not new. In 2011, Eysenbach<sup>13</sup> evaluated Twitter activity around published articles (tweetations) as a marker of academic activity. As a measure of immediate impact, he proposed the *tw7* as a metric of immediate impact, defined as tweetations citing an article within seven days of its publication. His work indicated that tweets were significantly associated with the subsequent citations of any article. Other alternative metrics are being evaluated to further quantify the influence and stature of these innovative channels. For example, the social media impact score (#SoME\_Impact score) was evaluated to see if it predicts citations and, as such, serves as a surrogate measure of impact.<sup>14</sup> The score used changes in the Altmetric score and was developed using a stepwise multivariable logistic regression model that ultimately included coverage in nontraditional sources, including blogs and policy reviews, along with the journal's impact factor. On a test set, they reported that the #SoME\_Impact score correlated with citations; the higher the score, the higher the 2-year citation rate. Furthermore, when tested on a validation set, it outperformed the Altmetric score. These data support the role of the social media coverage of scholarly articles as

a potentially helpful tool for academic impact. Evidence from medical schools taking these metrics into account is becoming clearer. One review examined US medical schools' promotion and tenure guidelines ( $n = 139$ ) to evaluate whether keywords associated with social media were included. They identified multiple associated words, including Alt-metrics, where publication occurs (eg, electronic, digital, or virtual), specific reach (follower versus subscriber), and specific platforms (eg, Twitter or Facebook but not TikTok or Tumblr), and reported that 121 (87%) contained at least one social media and digital scholarship keyword and a median of three. These results support the notion that schools are cognizant of these activities by their faculty and were taking them into account.<sup>15</sup> Given the burgeoning role of social media in the professional activities of clinicians, it is likely that not one methodology will suffice. Rather, the metrics should be relevant to one's professional context.

Beyond academia, social media affords opportunities for professional development, both within and outside academic institutions. Indeed, it is an aggregator that brings individuals together on the basis of a shared interest, irrespective of their academic rank, clinical position, or location of practice. This allows us to learn from the experiences of others and provides opportunities to collaboratively address novel issues. There are numerous examples of this, including collaboration for outcomes using social media in oncology (COSMO)<sup>16-19</sup> and OncoAlert,<sup>20,21</sup> a consortium of oncology professionals engaging across social media. In addition, opportunities to engage with national organizations have expanded through social media. In this regard, ASCO can be highlighted as an example through the adoption of social media channels, podcasts, and blogs, all of which enable bidirectional communication with its members and the public and provide opportunities for each to become more involved in the organization. Finally, a contemporary example of what is possible is the evolution of the COVID19 n Cancer Consortium,<sup>22</sup> which is discussed further below. Finally, social media engagement provides an opportunity to

showcase clinicians and their practices for better awareness within their communities.

### NETWORKING AND COLLABORATION IN ONCOLOGY

Crowdsourcing and professional networking on social media have increased over the past decade. Indeed, the COSMO developed granularly among like-minded individuals interested in harnessing the potential for social media to affect our work positively.<sup>23</sup> Another example was borne from the COVID-19 pandemic and the collective urgency to characterize the risks and experience of the pandemic on people with cancer. In response, the COVID-19 and Cancer Consortium (CCC19) was formed, with its origin emanating from a tweet.<sup>24</sup>

Finally, social media affords opportunities for collective support. An important example of this is the Facebook Hematology-Oncology Women Physician Group (HOWPG), a private group that includes more than 900 members.<sup>25</sup> In a survey of its members, Graff et al reported that they highly valued the educational elements of participation and the ability to discuss personal and professional challenges in a safe environment. Another effort highlighting the collaborative opportunities on social media was the #ShareTheMicNowMed social media effort, which occurred on June 22, 2020, and whose objective was to highlight the work of Black women in medicine and call for diversity in who participates in social media conversations.<sup>26</sup>

### GUIDANCE ON THE USE OF SOCIAL MEDIA

Despite the potential advantages of social media to help inform academic and professional development, it remains essential to stress the inherent risks when engaging in public forums to ourselves and our institutions. As such, oncology professionals should be cognizant of their institution's policies related to social media.<sup>27</sup> Specifically, it should be made clear whether one's online activities represent that of their institution (or other affiliation) or if they are personal in nature, referring only to the author's own views. This is especially important when considering whether one's biography on a site identifies their employer because any posts may reflect the institution itself. It is also important to be transparent about potential relationships that could be considered a relevant conflict of interest (COI).<sup>27</sup> One study reported that up to 80% of US hematologists and oncologists on Twitter had some form of financial COI (FCOI). Although the authors could not comment on the implications of their work, they suggest that a hashtag (#FCOI) is used on tweets of relevance and disclosure on one's profile or link to a more complete disclosure.<sup>28</sup>

Another area that must be respected is the protection of patients' health information. It is important to understand that none of the social media platforms are compliant with

the Health Information Portability and Accountability Act (HIPAA). Therefore, it is imperative that professionals do not disclose any information that could be construed as a potential breach of patient confidentiality. One analysis looked at the incidence of potential breaches of protected health information on Twitter shared by health care professionals under the hashtag #ShareAStoryInOneTweet.<sup>29</sup> Of 754 tweets sent by health care professionals, 87.4% shared a story related to direct patient care, 21.6% referenced the patient's age, and 2% mentioned the patient's name. Only 0.3% of the patients referenced patient consent to share information. In another analysis, researchers distributed a questionnaire on Twitter to gauge the Twitter activities of health care professionals, patients, and the general public.<sup>30</sup> They reported that people not employed as physicians were more likely to perceive Twitter posts as either unprofessional or a breach of confidentiality. One of the reasons they cite is that "doctors [may be] less aware that posts which would be acceptable in their professional lives may fail to meet this criterion in the eyes of the public." In another study, 491 people from three cities participated in a survey regarding physicians' social media behavior.<sup>31</sup> Their results suggested that online activities may affect patient trust, with some behaviors (eg, posting profanity and appearing intoxicated) exerting a negative effect. These data, albeit limited, emphasize the importance of posting with intention, that is, to post consciously, giving thought to how it might be *received* and *perceived*, especially since our posts are accessible by all, not just our peers.

It is also critical that medical assessments and therapy recommendations are conducted only in the context of established relationships. Therefore, clinicians should refrain from posts that may be of concern, including, although not limited to, responding to clinical queries posted on social media, particularly if one does not have a direct care relationship with that person, or following (or friending) patients you are treating.<sup>32</sup> Guidance on how to engage in social media is provided in [Table 3](#).

For all oncology professionals on social media, the boundaries between what to post and what not to post

**TABLE 3.** Guidance on the Professional Use of Social Media

Be	Description
Intentional	Think before you post Aim to add something constructive
Transparent	Proactively disclose relationships outside of your current position, not reactively
Clear	Speak plainly and clearly Your audience is global, not medical
Smart	Do not post anything you may regret Do not post when you are angry, exhausted, or inebriated
Yourself	Be authentic Interact as yourself. Remember, how much the public learns about you is up to you

require careful consideration. There is no guidance requiring any of us to let all aspects of our lives open to the public. The inherent right to privacy should help govern what one is comfortable posting. For some, personal information might be appropriate, whereas for others, their private lives must remain private. It is up to each person to determine what works for them.

In conclusion, social media has transformed communication. With an increasing user base and increasing

adoption of various use cases in medicine, it is important for health care professionals to be aware of its role in professional development and, increasingly, for academic promotion. Opportunities to network with a larger community of colleagues, patients, advocates, and others are vast and used in tangible and quantifiable ways. Although any social media account poses risks to one's professional reputation, it can be mitigated through a thoughtful approach to engagement.

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## AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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**AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST****Social Media and Professional Development for Oncology Professionals**

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