

Social media impacts on the dissemination of health-related information and patient-physician relationships

Gillian C. Goobie^{1,2}

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Introduction

In our increasingly interconnected society, healthcare professionals should be aware of the impacts of social media on the health and wellness of their patients. Social media has a number of positive attributes for patients, including greater access to health information, increased support networks, and avenues for healthcare policy-related messaging.¹ Similarly, social media can be used in medical education to engage learners, enhance professional development, and provide networking communities.² Despite these advantages, concerns have been raised regarding the potential for dissemination of misinformation through these platforms. Healthcare professionals need to be cognizant of their role on social media and remain aware of professionalism issues that can arise across these domains.

While social media usage is often perceived to be limited to “Millennials” and younger generations, there has been a steady increase in its usage among all age groups in the U.S. since 2006 (Figure 1).³ Regarding health-relevant social media usage, a 2013 survey of obstetrics and gynaecology patients found that 99% of respondents used one or more forms of social media, with 32% of these patients using social media for health-related reasons.⁴ This highlights the increasingly important role that social media plays in society and emphasizes the importance of evaluating the impact of these platforms on patient education and patient-physician relationships. This article seeks to summarize the major forms of social media used by patients, as well as explore the literature surrounding social media education and effective use of these platforms by healthcare professionals.

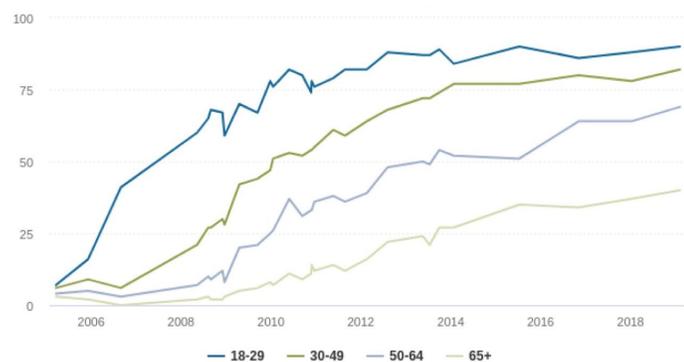


Figure 1 | The percentage of U.S. adults who use at least one social media site (2006-2019), by age group. Reproduced with permission from the Pew Research Center.

¹Clinician Investigator Program Fellow, University of British Columbia

²PhD Student, Department of Human Genetics, Graduate School of Public Health, University of Pittsburgh

Correspondence to
Gillian C. Goobie (gcgoobie@alumni.ubc.ca)

YouTube

YouTube is the second most frequented website on the internet, surpassed only by Google.⁵ A 2019 survey found that YouTube is used by 73% of U.S. adults, making it the most popular social media platform.³ YouTube has also been used in medical education, especially to promote procedural skill attainment.⁶ The accuracy and reliability of patient-directed health information on YouTube has been assessed for a variety of conditions. Many of these studies raise concerns about the propagation of misinformation, including the promotion of pro-anorexia and anti-vaccination perspectives.⁷⁻⁹

The accuracy and quality of medical information on YouTube may be affected by the source producing the videos.^{10,11} For idiopathic pulmonary fibrosis, information produced by foundations or medical organizations, news organizations, and independent medical professionals had higher accuracy and quality compared to videos produced by for profit organizations or independent non-medical users.¹¹ Non-recommended or potentially harmful therapies were endorsed in 17% of all videos, with the potential for producers to directly profit from consumer investment. These videos had higher viewership and user interaction than videos that did not support non-recommended therapies, thereby increasing the propagation of inaccurate information to patient audiences.

Despite these concerns, YouTube has the potential to provide accurate and reliable health information to patient audiences. Health on the Net (HON) is an organization that evaluates the accessibility and trustworthiness of health information on the internet. The HON Code tool has been used to assess the quality of information available on the internet and YouTube for several medical conditions.¹⁰⁻¹² The widespread implementation of this type of assessment tool for medically-relevant social media could help patients and healthcare providers identify informative resources for health-related content. Furthermore, the identification and professional endorsement of quality information could assist policy makers and investors in improving the accuracy of medical information on YouTube.

Facebook

After YouTube, Facebook is the second most popular form of social media,³ with numerous patient support groups available for many conditions.¹³⁻¹⁵ There is increasing public interest in using Facebook to engage with healthcare professionals and medical organizations.^{14,16} A 2016 study surveyed members of Facebook groups focused on congenital anomalies and found that 84% of respondents would like healthcare professionals to engage in their groups and 97% would like to join groups developed by their primary hospital.¹⁴ Healthcare professionals and medical organizations can harness this interest, along with the vast networks of Facebook, to engage patients in supportive and educational dialogues. One example of this approach is the Manchester Adult Cystic Fibrosis (CF) Centre Facebook page, which was created to improve healthcare communication and patient interactions in a large adult CF centre.¹⁷ This page has been successful

in engaging patients in both supportive and educational dialogues about CF.

Although there are many useful and supportive pages on Facebook, there is also increasing concern about the content and quality of some health-related information on the site. A 2014 study evaluated the source and content of 522 Facebook pages pertaining to the top 20 health conditions searched on Google.¹⁵ The most frequently found pages focused on marketing and promotion (32%), followed by information and awareness (21%), with fewer pages focusing on patient support (9%). The high proportion of marketing-related pages indicates that patients may be susceptible to advertising of non-recommended therapies on pages that are run by industry or for-profit organizations. Despite advertising concerns, there is a demand for more professional-driven content on social media.¹⁴ This avenue should be further developed by the healthcare system to offset the proliferation of misinformation across these platforms.

Twitter

The majority of publications evaluating health-related information on Twitter have been descriptive in nature.^{18–20} A smaller body of literature supports Twitter as a beneficial platform for patient support and education.^{21,22} Participation in the Breast Cancer Social Media Twitter support community was found to be associated with reduced anxiety levels among patient respondents in a 2015 survey.²¹ Another evaluation of colorectal cancer-related tweets found that 85% of a subset of tweets contained credible information, and that a higher number of retweets was correlated with a greater likelihood of the tweet containing accurate medical information.²² This preliminary research indicates that health information disseminated on Twitter may be of higher quality than seen on other platforms like YouTube and Facebook.

One potential reason for the higher quality of information on Twitter is that it is the most frequently used platform to disseminate information about novel research.⁶ Twitter is frequently used by health professionals, especially at medical conferences and in residency education.⁶ However, Twitter is less frequently used across the wider population, with only 22% of U.S. adults surveyed in 2019 using this platform.²³ Further study is required to verify the observed benefits of Twitter. These evidence-based conclusions may assist healthcare professionals in developing effective approaches of communicating health-related information using this platform.

Social media and the patient-physician relationship

Social media is a new and important element in the patient-physician relationship; however, the best methods of implementing social media training into medical curriculum remain unclear.²⁴ Social media training in medical school has been shown to enhance and maintain empathy and professionalism in medical students, aid in career advancement and networking, and provide a novel platform for learner engagement.² The University of British Columbia Faculty of Medicine Office of Professionalism and the College of Physicians and Surgeons of British Columbia teaches medical students about social media and professionalism, but formal social media training is not currently mandated by The Committee on the Accreditation of Canadian Medical Schools (CACMS).²⁵ A 2012 study surveying psychiatry residents found that 96% had a Facebook account, but the majority reported a lack of social media conduct training during their medical education.²⁵ A 2015 survey of family physicians and residents found that 15% of resident respondents and 56% of senior physician

respondents had received friend requests from patients within the past year.¹⁶ Of these physicians, only 10% had received formal social media training. This highlights the possibility of professionalism and privacy issues that may arise for healthcare professionals using social media.

Patients who use social media for health-related purposes have reported that their primary motives are to increase knowledge, exchange advice, and obtain social support.⁴ In contrast, the motives of health professionals for using health-related social media are largely related to communication with colleagues, marketing, and to a lesser extent, patient-physician communication.⁴ It is important to consider these differing motives when navigating the challenging landscape of social media as a health professional.

Conclusions

While there are numerous potential benefits from patients engaging in social media, there is also the possibility of harm from the dissemination of misinformation. Tools like the HON Code are being implemented in research to evaluate the quality of information on websites and YouTube, but these tools need to be more widely applied across various forms of social media. Wider application of these tools would help to ensure that medical information propagated across these platforms is accurate and not exploitative. Equally important is the recognition of how medical information received through these forums can impact the patient-physician relationship. The use of social media by both healthcare professionals and patients has the potential to blur professional lines and introduce privacy issues. Social media conduct training should be provided throughout continuing medical education, as this is a constantly evolving domain.

It is imperative that healthcare professionals and medical organizations recognize this new realm for communication of health information and counsel patients about the responsible use of social media. The possible benefits of social media in healthcare are vast, but harnessing this potential requires health professionals to engage social media investors and policymakers to achieve a common goal of providing accurate and accessible health information through these platforms.

Conflict of interest

The author has declared no conflict of interest.

References

1. Moorhead SA, Hazlett DE, Harrison L, Carroll JK, Irwin A, Hoving C, *et al*. A New dimension of health care: systematic review of the uses, benefits, and limitations of social media for health communication. *J Med Internet Res*. 2013;15(4):e85.
2. Cheston CC, Flickinger TE, Chisolm MS. Social media use in medical education: a systematic review. *Academic Medicine*. 2013;88(6):893–901.
3. Pew Research Center. Demographics of Social Media Users and Adoption in the United States [Internet]. Pew Research Center, Washington DC. 2019 [cited 2019 Nov 3]. Available from: <https://www.pewresearch.org/internet/fact-sheet/social-media/>
4. Antheunis ML, Tates K, Nieboer E. Patients' and health professionals' use of social media in health care: Motives, barriers and expectations. *Patient Educ Couns*. 2013;92(3):426–31.
5. Alexa. youtube.com Competitive Analysis, Marketing Mix and Traffic [Internet]. Alexa Internet, Inc. 2019 [cited 2019 Nov 3]. Available from: <https://www.alexa.com/siteinfo/youtube.com>
6. Sterling M, Leung P, Wright D, Bishop TF. The use of social media in graduate medical education: a systematic review. *Acad Med*. 2017;92(7):1043–56.
7. Syed-Abdul S, Fernandez-Luque L, Jian W-S, Li Y-C, Crain S, Hsu M-H, *et al*. Misleading health-related information promoted through video-based social media: anorexia on YouTube. *J Med Internet Res*. 2013;15(2):e30.
8. Keelan J, Pavri-Garcia V, Tomlinson G, Wilson K. YouTube as a source of information on immunization: a content analysis. *JAMA*. 2007;298(21):2482–4.
9. Ache KA, Wallace LS. Human papillomavirus vaccination coverage on YouTube. *Am J Prev Med*. 2008;35(4):389–92.
10. Stellefson M, Chaney B, Ochpa K, Chaney D, Haider Z, Hanik B, *et al*. YouTube as a source of chronic obstructive pulmonary disease patient education: a social media content analysis. *Chronic Respi Dis*. 2014;11(2):61–71.

11. Goobie GC, Guler SA, Johannson KA, Fisher JH, Ryerson CJ. YouTube videos as a source of misinformation on idiopathic pulmonary fibrosis. *Ann Am Thorac Soc*. 2019;16(5):572–9.
12. Fisher JH, O'Connor D, Flexman AM, Shapera S, Ryerson CJ. Accuracy and reliability of internet resources for information on idiopathic pulmonary fibrosis. *Am J Resp Crit Care Med*. 2016;194(2):218–25.
13. AlQarni ZA, Yunus F, Househ MS. Health information sharing on Facebook: an exploratory study on diabetes mellitus. *J Infect Publ Health*. 2016;9(6):708–12.
14. Jacobs R, Boyd L, Brennan K, Sinha CK, Giuliani S. The importance of social media for patients and families affected by congenital anomalies: a Facebook cross-sectional analysis and user survey. *J Ped Surg*. 2016;51(11):1766–71.
15. Hale TM, Pathipati AS, Zan S, Jethwani K. Representation of health conditions on Facebook: content analysis and evaluation of user engagement. *J Med Internet Res*. 2014;16(8):e182.
16. Klee D, Covey C, Zhong L. Social media beliefs and usage among family medicine residents and practicing family physicians. *Fam Med*. 2015;47(3):222–6.
17. Dale C, Reid N, Cox K, Jones A, Williams H, Shawcross A, et al. Using social media to improve communication with people with cystic fibrosis. *ERJ Open Res*. 2016;2(1):00015.
18. Crannell WC, Clark E, Jones C, James TA, Moore J. A pattern-matched Twitter analysis of US cancer-patient sentiments. *J Surg Res*. 2016;206(2):536–42.
19. Tsuya A, Sugawara Y, Tanaka A, Narimatsu H. Do cancer patients tweet? Examining the twitter use of cancer patients in Japan. *J Med Internet Res*. 2014;16(5):1–8.
20. Weeg C, Schwartz HA, Hill S, Merchant RM, Arango C, Ungar L. Using Twitter to measure public discussion of diseases: a case study. *JMIR Public Health Surveill*. 2015;1(1):e6.
21. Attai DJ, Cowher MS, Al-Hamadani M, Schoger JM, Staley AC, Landercasper J. Twitter social media is an effective tool for breast cancer patient education and support: patient-reported outcomes by survey. *J Med Internet Res*. 2015;17(7):e188.
22. Park S, Oh H-K, Park G, Suh B, Bae WK, Kim JW, et al. The source and credibility of colorectal cancer information on Twitter. *Medicine*. 2016;95(7):e2775.
23. Vogels EA. Millennials stand out for their technology use, but older generations also embrace digital life [Internet]. Pew Research Center, Washington D.C. 2019 [cited 2019 Nov 3]. Available from: <https://www.pewresearch.org/fact-tank/2019/09/09/us-generations-technology-use/>
24. Flynn L, Jalali A, Moreau KA, Flynn L V, Postgrad Med J MK. Learning theory and its application to the use of social media in medical education. *Postgrad Med J*. 2015;1080:556–60.
25. Ginory A, Sabatier LM, Eth S. Addressing therapeutic boundaries in social networking. *Psychiatry*. 2012;75(1):40–8.