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Social media and the modern scientist: a research primer for low- and middle-income countries

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Research primer

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ABSTRACT

Social media has changed the way we communicate. Wherever you are in the world, various forms of social media are being used by individuals to share information and connect without borders. Due to its ubiquity, social media holds great promise in linking clinicians, scientists, investigators, and the public to change the way we conduct scientific discourse. In this paper, we present a step-by-step guide on optimizing your social media strategy with regards to: research/scholarly practice (discourse, collaboration, recruitment), knowledge translation, dissemination, and education. This guide also highlights key readings that provide guidance to those interested in incorporating social media into their scholarly practice.

African relevance

- Social media is a disruptor of traditional communication, opening up new opportunities for low- and middle-income country scholars.
- This paper highlights some key considerations from leading experts in the field of social media-based research and dissemination.
- Co-authored by individuals who work in LMIC, this paper is framed to assist those within Africa and beyond to discover the power of social media for research purposes.

The International Federation for Emergency Medicine global health research primer

This paper forms part 6 of a series of *how to* papers, commissioned by the International Federation for Emergency Medicine. It describes how social media can be used as a scholar to: 1) conduct research, 2) disseminate and translate findings, and 3) develop an academic brand. We have also included additional tips and pitfalls that are relevant to emergency medicine researchers.

Background

The use of social media platforms such as Twitter, Instagram, WhatsApp and Facebook has allowed for easy and rapid dissemination and sharing of information to much wider audiences than traditional methods of communication [1]. Similarly, social media acts as a hub for individuals from all over the world to interact, fostering a unique opportunity for collaboration that spans beyond country borders and continents. These features have made it crucial that scholars engage on social media not only to share their scholarly activities, but also to provide credible content for global consumption. Connecting researchers around the world is increasingly seen as an avenue for improving international research, and this is an important perspective for *AfJEM* readers to understand as we seek to become leaders in the dissemination of valuable content.
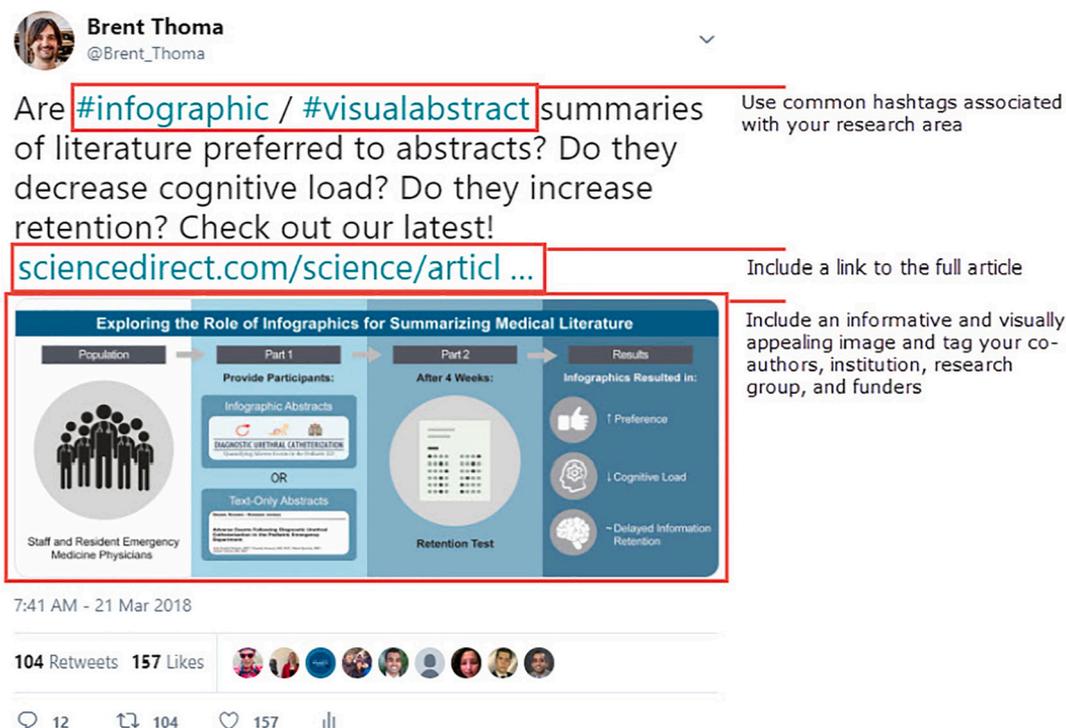
Fig. 1. Anatomy of a knowledge translation or dissemination tweet.
Notes: 280 characters max (but optimally ~120 characters); make sure to embed a LINK to the paper; use common hashtags associated with your research area; consider embedding an open source photo that is relevant and tagging up to 10 co-authors in the photo to hack around using characters to mention contributors; make sure to tag your institution(s), research group, funders ± key co-authors directly in the tweet or in a photo tag.

Using social media to aid in conducting research

Collaborative spaces

Finding the right platform to connect is vitally important in collaboration. Currently, Twitter is a prominent social media hub for information exchange in emergency medicine (see Fig. 1 for an example tweet). Hashtags, which are select keywords used as tags, are often used on Twitter to help you become more "discoverable" and allow others to search your social media correspondence (e.g. #MedEd on Twitter). Other Social Media platforms such as Facebook and Instagram have uses based on the goals of the user. For example, Facebook allows users to create groups/forums, which promotes members to share information, pictures, and media-files for medical education purposes. Instagram is primarily a photo-sharing service, but it is also an effective platform for users to share education-related items such as Infographics (information strategically packed into one or two photos for easy and effective distribution) and helpful guidelines [31,32]. Regardless of which one you use, the bottom line for all of these platforms is that they allow users to share and collaborate information in real-time without geographical borders.

Once you have formulated a digital team of collaborators and want to share information privately, information exchange tools like Slack, Google Docs, WhatsApp and Dropbox are effective in achieving this goal [32]. Meetings can be conducted using online communication tools such as Apple's *Facetime*, *Zoom*, or *Google Meet*, which can make global collaboration easily achievable. Websites such as CanadiEM (https://www.canadiem.org), Academic Life in Medicine (https://www.aliem.com), Brave African Discussions in Emergency Medicine (https://badem.co.za/), and Life in the Fast Lane Blog (https://lifeinthefastlane.com/) can act as hubs for collaboration, peer-editing, and information dissemination [2–5]. The academic world can literally be at your fingertips as long as you are willing to share and collaborate with the right peers.

Whilst working collaboratively in the *cloud* offers many opportunities for improving communication and productivity, it is important as clinician scholars to remember that we are often dealing with personal and sensitive data. Before sharing information with international collaborators, it is necessary to consider local and regional regulations relating to the protection of personal information, as well as ethical issues relating to confidentiality and the level of consent provided by research participants [6]. Be aware that files in the cloud are still stored on multiple servers in many different locations and this may have implications where there are restrictions on personal and clinical data being shared outside of the country of origin.

Recruiting participants

Social media has been used successfully as a recruitment methodology for study participants in numerous contexts [7–10]. Research has found that not only is it cost effective, but it can reach target populations that have traditionally been hard to recruit for studies [11] such as low-income patients [12]. Whilst promising, it is likely that participants recruited via social media are not representative of the entire population of interest. Partly for this reason, most of the early studies using social media for patient recruitment have not relied upon it entirely but used it to supplement other modalities [7]. Beyond patient recruitment, recent studies have demonstrated the effective recruitment of health professionals by targeted campaigns directed at virtual communities of practice [13–15]. Overall, the development of a social media recruitment strategy requires knowledge of the target population and the platforms that they use, as well as tailoring the language and type of messaging for the target audience and the platform you are using.

Collecting data

Whilst not yet common practice, some research groups have begun

experimenting with the use of social media to provide updates and increase enrolment in clinical studies. For example, the ARISE study investigated goal-directed resuscitation in sepsis [16]. It's research team started a Twitter handle, @ARISEstudy, during the data collection phase of the study to engage with physicians recruiting for the study. It also engaged with other Twitter users both before and after the study's publication to both raise awareness and assist with knowledge dissemination and translation [17].

Disseminating findings of a specific paper

Many healthcare providers will grimace at the misinformation that our patients bring to their bedsides as they come through our emergency departments and wards [18]. Similarly, with the growth of Free Open Access Medical education (FOAM or #FOAMed), it is far easier for trainees and providers to gain access to *other people's* interpretation of your research findings. Therefore, it is crucial that the modern academic physician or researcher views public engagement and knowledge translation as a core part of their mission. Whether you are interacting online to help reach and teach the public, engage with advocacy groups, or translate/disseminate your own work, it is important to remember that getting the word out about your most recent paper is a crucial part of the scientific journey [17]. With a large proportion of research funded by the public purse, one might argue that there is a moral imperative for engaging in the act of disseminating your paper's true message correctly. Additionally, if you do not do it yourself, there is a risk that someone else will interpret (or misinterpret) your own work. Increasingly journals are becoming aware of the power of social media for dissemination of science [19]. Journals often request that authors prepare a tweet about their paper when they submit their articles.

Another recent social media technique for information dissemination and knowledge translation has been using visual abstracts [20] or infographics [21–23]. Whilst the evidence for the use of these is still weak [21–23], increased engagement with tweets suggests that at least there is increase disseminative value of this technique.

Developing your online academic brand

Once you have chosen a platform to engage with, it is important to formulate a digital identity by creating a unique mindset and academic persona that will resonate with other users [18]. Developing a digital identity is not achieved in an instant but grows as you continue to engage with others online. The second step would be to find individuals who have similar academic interests and ideas. These individuals are usually interconnected to other like-minded people and by identifying these connections, you can expand your network and increase your academic reach and influence. By investing time to develop this network, you will be introduced to other emerging voices in your field and potential mentors, who can connect you to a broader network and aid in generating future scholarly partnerships. Additionally, sustained contributions in social media is critical to gaining followership and you can do this by sharing articles, commenting on novel literature, and promoting scholarly projects and accomplishments.

Social media is also a great way to build your academic brand by generating useful and consistent stream of content. The content ideally should be in your specific area of interest. Consistency is key to building the brand. You may also choose to curate content by other people with similar interests by re-sharing their content on your platform with the appropriate reference to the original author. Other potential sources of content are journal articles that you have read that are relevant within your area of interest [18].

Building a successful online brand can be very beneficial for a junior academic's career. Undoubtedly, it can be a career accelerator; for example, papers that are shared on social media have been reported to have more citations [18,24]. This has resulted in the dawn of a new set of metrics known as *alternative metrics* (or "altmetrics"), which help to quantify the immediate disseminative impact of scholarship via social media [25,26]. Obviously, sharing your own content in a humble manner (e.g. celebrating your junior first author on their successful publication of a paper, retweeting when a journal posts about your newly published paper) is one way of highlighting content. Junior academics can continue to build upon their academic portfolio with increased dissemination of their work by using social media platforms, thus evolving their academic brand and reach.

Teaching about your science: techniques for dissemination & knowledge translation

There are several ways in which you can harness the power of social media for Knowledge Translation and Dissemination of your own work. In his book *Platform* [27], Michael Hyatt describes a 3-tiered conceptual framework where he describes the core components of any digital strategy:

1) Homebase - something that you control and can alter (e.g. a personal or research team website), some pages allow individuals to "subscribe" and find out about your posts.
2) Embassies - accounts that you hold on popular social media platforms where you have space that you can control, but is essentially "rented to you" from that platform - e.g. a Twitter or LinkedIn account
3) Outposts (Listening posts) - ways that you can surveil cyberspace and "listen" to what people are saying about you or your work. If you have an uncommon name, you can consider setting up a Google Alert for yourself. You can also consider making note of the Altmetric or Plumetric signals on your individual papers, which can aggregate social media chatter about your work [28].

With regards to home bases, it should be noted that these are notoriously hard to maintain and can be even harder to optimize for search engines. Ensure that your faculty website links to your personal site but is also consistent with the academic brand you wish to convey.

In terms of Embassies, Twitter is presently still the dominant portal for dissemination, although this is likely to change rapidly. Social media platforms wax and wane like the tides (e.g. can anyone even remember MySpace?), and what may occur on Twitter at the time of writing this chapter may now occur on Instagram, Reddit, TikTok, or a new platform that does not yet exist. Regardless, we encourage you to consider your target audience and to follow them into the social media markets where they "live". If you are trying to reach your local nursing corps and they are predominantly Facebook users, then consider creating a Facebook Group or Page. Ultimately, it is completely acceptable to use social media embassies to disseminate and promote your own work [17,18,29]. We would advise that you check with your university or hospital media relations (or social media teams) if you are not sure about specific tone or voice - as these individuals will likely be able to provide you with the best coaching, but also may help to amplify your postings on their own channels.

Tips on this topic and pitfalls to avoid

Tip 1: Curate the people that you follow

If you prefer to be a social media consumer, keep your newsfeeds relevant by only following peers and accounts that share trustworthy information that is useful to you. However, be sure to follow and engage those with a differing viewpoint to you as well or else you risk creating an echo chamber.

Tip 2: Share your influence

Watching your follower count tick through single digits can be disheartening when you start to invest the time and effort to build a digital identity. Established scholars with a strong following can help by promoting junior (and senior) colleagues in their own networks. Retweet their contributions, highlight their achievements and tag them where appropriate. Engage with and highlight different voices within your field of interest.

Tip 3: Know your audience

With each post and platform, consider who you are writing for - scholarly peers, advocacy groups or a lay audience perhaps. Adjust your language and tone to ensure the message is appropriate and easily understood.

Pitfalls to consider as an emergency medicine researcher on social media

Pitfall 1: The professionalism pitfall

There is ample literature written about professionalism for online medical or healthcare providers [30–32]. Regardless, it is still something to bear in mind, since both your professional and scholarly brands will be at stake. Consider using a simple filter: "Would I say this on a podium at a conference?" If the answer is no, then, rethink your social media posting.

Pitfall 2: Dissemination is NOT the same as adoption/implementation

There is still a gap between people reading your paper and putting it into action. Simply putting your work out there and raising awareness may not increase adoption and implementation. Work with implementation scientists and quality improvement leaders to work on initiatives to role-model and exemplify great knowledge translation.

Pitfall 3: Consider bandwidth for consumers, especially in LMICs

Remember that when you create online products that not everyone has the same bandwidth to consume. High-resolution videos or even photos might be a barrier to consumption for some. Best practices may include providing an indication of the file size upon website, before individuals click to download.

Summary

Social media in academia is a vastly growing tool for knowledge translation and information dissemination. It provides an easily accessible channel for researchers and scholars to connect, collaborate, and communicate amongst themselves to further advance their academic pursuits. As mentioned, there are many social media platforms you can use depending on your educational goals and objectives. Techniques such as building an online academic brand and forming a digital identity will aid in sharing your work more effectively. The potential for social media use in academics is great and with the right approach and guidance, its benefits for scientists all over the world seem boundless.

Authors' contribution

Authors contributed as follow to the conception or design of the work; the acquisition, analysis, or interpretation of data for the work; and drafting the work or revising it critically for important intellectual content: JKD, BT and TC contributed 25%; CS 15%; and BWW 10%. All authors approved the version to be published and agreed to be accountable for all aspects of the work.

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