Commentary on:
Social Media Metrics and Bibliometric Profiles of Neurosurgical Departments and Journals: Is There a Relationship?
by Alotaibi et al. World Neurosurg 90:574-579, 2016

Social Media in Academic Neurosurgery

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Whether we like it or not, social media are here to stay. Although the channels may switch and evolve over time, industry, health care, politics, academia, and every other segment of society will use digital media platforms to educate, enlighten, sell to, and build relationships with desired audiences.

In the United States, 8 of 10 Internet users search for health information online, and 74% of these people use social media.[1] With the skyrocketing use of social media in medicine and health care, the timing is key for the publication of Alotaibi et al.'s article entitled "Social media metrics and bibliometric profiles of neurosurgical departments and journals: is there a relationship?"

Several of these investigators previously published together the first article in the neurosurgical literature evaluating the use of social media in academic practices; a review in 2015 of social media in neurosurgery found 158 social media accounts (86 Facebook, 59 Twitter, and 13 YouTube) of private and academic practice neurosurgical departments. Of the 158 accounts retrieved, 117 or 74% were for private practice centers.[2] The investigators' new publication represents a follow-up effort to determine if there is a link between having a social media presence and the academic standing and productivity of neurosurgery programs and journals.[2] We expect that this group and others will build further on this article, which serves as a snapshot, a window in time, to evaluate correlations. As we follow these trends, we will learn further what works and does not, and the approach to social media for neurosurgery programs and journals will be refined.

Twitter and Facebook may be just the tips of the iceberg in terms of social media platforms. Hospitals, health systems, and individual health care programs and providers are now also using LinkedIn, Pinterest, Instagram, Periscope, YouTube, and other channels to broadcast their messages and engage their audiences.

Little is known about the impact of social media on the academic productivity of neurosurgery programs. In his study, "Social media metrics and bibliometric profiles of neurosurgical departments and journals: is there a relationship?" Andres M. Lozano, M.D, Ph.D, Professor and Dan Family Chairman of Neurosurgery University of Toronto, and his researchers present the first effort in neurosurgery to determine the extent to which use of social media by academic neurosurgery programs and neurosurgery journals correlates with certain academic indices. The researchers looked at 119 accredited academic neurosurgery programs in North America, finding that a minority of 36 programs have social media accounts, and at 38 neurosurgical journals, 11 had social media accounts.

Alotaibi et al.[2] found that although having a social media presence was associated with statistically significant higher values of academic impact metrics, such as numbers of publications and citations, they could not correlate specific social media metrics, such as social media account activity, with academic productivity indices. Among neurosurgery journals, those with a social media presence (11 journals) had higher academic metrics compared with journals without social media presence.

Key words
- Bibliometric
- Neurosurgery
- Social Media

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The findings diverged from other non-neurosurgery studies that did find correlations between activity on social media and academic performance.[3-5]

The investigators offer several possible explanations for these variations. They suggest that more robust social media efforts within larger, more established neurosurgery programs could account for higher academic productivity, such as citations and collaborations. Simply having an online presence, participating in social media networks like ResearchGate, may improve publication viewership and increase the number of citations. The investigators suggested that their inability to correlate specific social media metrics with academic indices could reflect the relatively small size of the neurosurgical community and lack of social media use among neurosurgeons compared with other fields.

The role of social media in medicine is a relatively unstudied area, and Lozano's work to illuminate a phenomenon that grows more prevalent every day should be lauded. As neurosurgery programs struggle to remain relevant and profitable in an era of budget constraints, government mandates, and public reporting of various quality and outcome measure, telling a program's own story, maintaining visibility, and defining our reputation in the media may be essential. Social media platforms can help institutions retain name recognition within the specialty and beyond, educate patients and our communities, and potentially expand our outreach.

Different social media modes, such as Facebook and Twitter, tend to attract different audiences and their targeted use varies by institution. Whereas 1 program might use Twitter to push out a just-published article in an academic journal, another might use Facebook to post links to stories from grateful patients.

This **WORLD NEUROSURGERY** publication, "Social media metrics and bibliometric profiles of neurosurgical departments and journals: is there a relationship?" is a terrific start toward our understanding of the impact of social media on our profession, raising key questions that are worthy of future research, such as:

- What is the best use of social media for a neurosurgeon or a neurosurgery program/journal?
- Will use of social media help us recruit new talent, attract new patients, or boost our standings in national rankings?
- Are some social media platforms more effective than others at reaching desired goals?
- Is it cost effective to invest time and money in developing a social media presence to create and promote a program's brand?
- Is it counterintuitive to conceive of a social media strategy that improves productivity?
- Is there a saturation point for the usefulness of social media?
- What are the potential pitfalls and risks of embracing social media for a neurosurgery program?

The study by Alotaibi et al.[2] is designed to show us a snapshot in time, and relative to this baseline, we will better determine in the years to come whether investment in building a social media presence pays dividends over a longer period.

Understanding that a social media presence can take months, even years, to develop and mature, our neurosurgery programs and journals are just beginning to track social media metrics, to not only measure the number of likes and tweets, for example, but also to measure user engagement through number of click-throughs to relevant Web pages, responses to posts, and shares of posts to other networks. These trends, over time, will be instructive in helping guide effective future use of the social media platform.

The role of social media in business is first and foremost in the thinking of corporate Chief Executive Officers and is the cover article for the March 2016 issue of *Harvard Business Review*. The Lozano publication allows us to consider the use of social media in the context of business development and branding for our neurosurgery programs and journals. Social media thought leaders studying its impact across sectors have found that using social media sites such as Facebook, YouTube, and Twitter may have little pay-off when comes to brand building.[6] Douglas Holt, founder and president of the Cultural Strategy Group and a former Harvard Business School professor, argues that brands succeed when they generate cultural relevance. He says digital crowds now serve as effective and prolific innovators of culture, a phenomenon he calls "crowd culture," which can connect once-remote communities into networks capable of incubating new ideologies and practices.[6]

Holt's observations for business are similar with what Chris Boyer, director, digital marketing and communications for Inova Health System, and others have found in health care. The use of social media in health care is not generally helpful to promote a hospital, health system, or individual clinical enterprise. Chris Boyer, a national leader in social media strategy, argues that health care social media should be patient centered. He suggests that providing information already accessible online, such as a publication, is not as effective as offering wellness, general health, and community-specific information.[7] At Inova, for example, he says they rarely use social media for marketing, instead providing "current, up-to-date content, such as information about free health education events or useable, actionable health information."[7]

Although numerous studies have found that clinicians are warming to the idea of interacting with patients via social media,[8] many physicians remain resistant. In a 2012 survey of approximately 480 practicing and student physicians,[8] 68% believed that it was ethically problematic to interact with patients on social networks for either personal or professional reasons.

Could neurosurgeons find and develop messages that would resonate with crowd culture and generate success? Holt says that although crowd culture diminishes the impact of traditional branded content, it has made possible an alternative approach that he calls "cultural branding."[6] In cultural branding, the brand promotes an innovative ideology that breaks with convention. Holt cites the initially successful Chipotle brand, which capitalized on an emerging distrust of industrial food production and became a social media sensation with rapid spread of their crowd culture message. Chipotle's social media presence may have also accounted for its recent loss of popularity around food safety in its restaurants as well.

For neurosurgery, perhaps the push toward lower-cost, higher-quality care could be the ideological framework for crowd culture spread messaging that promotes prevention of back injuries in the workplace or illuminates the importance of aspirin/other medications for those at risk for stroke, for example. Messages that help people stay healthy and avoid surgery altogether, or that promote safer, less extensive surgeries might hit a different, even unexpected, note that could help build a neurosurgery program or journal brand.

In addition to using social media successfully to distribute an educational message through crowd culture, another way that social media is successful is in promoting the celebrity of an individual. It remains to be seen if a medical or scientific expert can develop tremendous prominence in his or her field through blogs or microblogging platforms such as Twitter. One example is University of California at Davis stem cell researcher Paul Knoefpler, Ph.D., not initially well known in his own field of stem cell research, but who has become a leading voice for the public. His willingness to take on thorny topics, as well as offer thoughtful commentary on other scientists' work via his blog, *The Niche*, and his Twitter feed, have garnered numerous national media interviews and awards, including being named in 2013 as one of the 50 most influential people in the stem cell field.[9]

The article by Alotaibi et al.[2] did not drill down on the nature of the social media content of the neurosurgery programs; however, it is likely that individual celebrity neurosurgeons may have accounted for a good portion of the media activity for those centers. This could be instructive for neurosurgery programs and journals, which might identify neurosurgeons who have celebrity status and who could attract followers. This approach would carry risk for a program or institution if the individual is recruited elsewhere or if there is sporadic negative press from an individual patient or legal case.

As the neurosurgery specialty delves into the social media sphere, we are wise to determine first our goals and then establish guidelines for social media use. Good social media policies for hospitals, health systems, and health care providers are easily accessible, as are those developed by professional societies. An excellent general guideline is found in Ventola's "Social media and health care professionals: benefits, risks, and best practices".[10]

This new work of Alotaibi and colleauges provides an important baseline for further study into the role that social media can and should play in the work of individual neurosurgeons and the marketing of neurosurgery programs and the journals that publish our scholarly articles. Patient needs, their social media practices, and an understanding of the importance of crowd culture and cultural branding should be taken into account when establishing best social media practices.

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