

Who Is to Blame? Medical Hype in the Media

Julie M. Robillard, PhD*

National Core for Neuroethics, Djavad Mowafaghian Centre for Brain Health, Division of Neurology, Department of Medicine, University of British Columbia, Vancouver, British Columbia, Canada

The rise of online and social media platforms as tools for the dissemination and exchange of findings from health research presents both unique opportunities and critical challenges. A Viewpoint featured in the September issue of *Movement Disorders* highlights one of these challenges: the hype and sensationalism that surround medical treatments, and treatments for Parkinson's disease (PD) specifically, in the media.¹ This issue is timely, as media consumption has largely shifted to the online environment, and recent survey data show that 91% of physicians have seen patients who made inquiries about information they found on the Internet.²

Although online health information may spur important conversations between patients and physicians, low-quality communication about potential treatments for conditions such as PD may lead to important harms. The authors of the Viewpoint highlight issues such as false hopes, tensions in the patient-physician relationship, and potential increases in medical tourism, all of which are supported by empirical evidence. Overly hyped or factually incorrect online health information can also lead to the early adoption, use, and promotion of unproven interventions,³ as well as to negative health outcomes. As one example, a study about websites containing information about popular herbal supplements showed that one-quarter of these websites provide recommendations that, if followed, will lead directly to physical harms.⁴ On the societal level, overly simplified or hyped findings from medical research can dilute verifiable expertise to the point that the authority of experts over the subject matter appears questionable to those who are uncertain about whom to trust. This, in turn, can lead to a reduction in public confidence in both scientists and institutions,⁵ sometimes with disastrous consequences, as has been the case with childhood immunizations.

Addressing the urgent challenges raised by low-quality online information requires a careful examination of the role of scientists, information providers, and patient communities in knowledge dissemination and exchange. To better understand the phenomenon of medical hype in the media, we must first consider the broader context in which it takes place.⁶ The deep specialization of scientific research, the evolving landscape of academic publishing, and the changing media environment, along with contextual pressures, have created complex new challenges for scientists and information providers alike.

In modern academia, the “publish-or-perish” environment combined with the explosion in the number of low-quality or even fraudulent academic journal publishers has led to a flooding of the literature with evidence gathered with varying levels of rigor. In parallel with this development, scientists face tremendous pressures to appeal to a wide range of stakeholders, including funding bodies, the industry, and the public.⁷ Taken together, these pressures can reduce complicated scientific discovery to simple sound bites or headlines, overly simplified reports, and exaggerated claims of real-world impact in a range of communication types, from media interviews to grant proposal summaries. Wide-ranging attempts to disseminate new research findings can result in miscommunication and misinterpretation, especially among nonexperts. Meanwhile, scientists who actively pursue high-quality opportunities for public engagement and science communication are viewed as less serious compared with their peers who favor traditional academic communication channels. On this topic, a survey by the Royal Society revealed that researchers felt that “public engagement activities are seen by peers as bad for their career” and that “public engagement was done by those who were ‘not good enough’ for an academic career.”⁸ The stigma attached to scientists to pursue media and public engagement activities persists to this day, despite the fact that the research community recognizes the benefits of an informed public that values medical research.

Alongside the complex pressures scientists face when communicating their results, the media environment, too, is changing. The mass media are increasingly democratized, and the last few years have seen a sharp

*Correspondence to: Julie M. Robillard, PhD, Djavad Mowafaghian Centre for Brain Health, Room 3450D, 2215 Wesbrook Mall, Vancouver, BC V6T 1Z3; jrobilla@mail.ubc.ca

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rise in the development, launch, and use of interactive and dynamic online and mobile platforms. Faced with this new environment, media institutions and journalists are also experiencing pressures when communicating about medical research. They must now operate on global platforms and maximize profit by creating and promoting newsworthy, bite-sized content.⁹ As one example, headline writers for traditional media outlets must now compete with social media-based news aggregators that are not bound by the same code of professional ethics and contend with short attention spans. As a result, headlines are increasingly designed to elicit an emotional response in readers to generate clicks. Beyond headlines, studies analyzing science and health content in both traditional and social media have found that the benefits of emerging treatments and biotechnologies tend to be exaggerated, whereas the risks associated with these interventions are minimally discussed.¹⁰ The media are also competing with information providers that may seem legitimate but have conflicts of interest, as various industries are attempting to capitalize on online health information-seeking behaviors. As a result, the line between information and advertisement is increasingly blurred.

Solutions to address the challenges of communicating about health research in the digital era will need to recognize the shared responsibility for these challenges and target all stakeholders: scientists, journalists and the media, health information consumers, and clinicians. The science community will need to reject traditional research dissemination models — in which expertise trickles down from the academy — and embrace participatory frameworks in which scientists are equal stakeholders in a broader conversation about their own work. Academic institutions and funding bodies will need to address one of the root causes of overstated research findings by developing mechanisms to decrease the pressure scientists face to “sell” their research and to promote responsible and effective public engagement. In the media community, publishers will benefit from training on recognizing the harms of hyped or misleading health-related content, understanding the importance of framing health research in nonsensationalized, lay-friendly terms, and assessing the quality of source material in the fast-changing academic publication landscape. Finally, those who seek health information online will need an improved understanding of the process of health research through early and ongoing education in digital and health literacy. Many organizations have recognized these priorities and developed tools and resources to assist the public in interpreting scientific and health information, such as Sense About Science (senseaboutscience.org) and the Understanding Health Research resource (<http://www.understanding-healthresearch.org>). Health researchers can access science communication training opportunities at many

institutions and through organizations such as the American Association for the Advancement of Science (<https://www.aaas.org/pes/communicatingscience>) and COMPASS (www.compassonline.org), to name a few. Ideally, solutions will target several stakeholders in a unified effort. In response to this need, academics have put forward conceptual frameworks that bring together journalists and scientists to form a knowledge community with the goal of improving the reliability of science reporting.¹¹

Clinicians, too, will play a pivotal role in improving health communication and must embrace the responsibilities that come with being on the front lines of addressing the questions and harms that stem from low-quality or overly hyped medical information. Health care professionals will need to be aware of the current trends and media coverage in their field of practice and equip themselves with a list of high-quality resources as well as tools that can assist their patients in identifying trustworthy sources when seeking health information online. They should also consider encouraging their patients to be critical of claims that seem too good to be true and to read the fine print when faced with online interventions such as self-diagnostic tests.¹²

Despite the challenges associated with online health information, we must also consider its many benefits. The Internet provides a channel for very rapid dissemination of information, promotes interactive, multidirectional engagement, contributes to empowerment and autonomy in health decision making, and can play a key role in reducing barriers to access information and services.¹³ Internet users may also experience social benefits such as support when participating in interactive discussion groups or forums.^{14,15} As we strive to address issues of hype and sensationalism in medical reporting, we should also take the opportunity to bring together the scientific, media, and patient communities to explore how we may harness the online environment to promote positive health decision making across the life span. ■

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