Keeping It Real in the Era of Bots and Trolls

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Ominously, misinformation on social media can have adverse effects on public health. One example is the increasingly prevalent antivaccine posts that serve to legitimate debate about vaccine safety, potentially reducing vaccination rates and increasing vaccine-preventable disease. The concept that MMR vaccination causes autism was based on one flawed study (Wakefield), long since retracted, countered by seventeen much larger and higher quality studies that have proven otherwise. Nevertheless, the internet abounds with celebrities, activists, and politicians with no specific knowledge or training who use their fame to promote a message that causes serious harm.

Being misinformed is not only a function of a person’s ability and motivation to spot falsehoods, but also of other group-level and societal factors that increase the chances of citizens to be exposed to factual information. In “Science audiences, misinformation, and fake news,” Scheufele and Krause state, “in the most recent US Science & Engineering Indicators (SEI) survey, one in three Americans (36%) misunderstood the concept of probability; half of the population (49%) was unable to provide a correct description of a scientific experiment; and three in four (77%) were unable to describe the idea of a scientific study, indicating an inability among many members of the public...to differentiate a sound scientific study from a poorly conducted one and to understand the scientific process more broadly.” A recent assessment of American students’ media literacy demonstrates that the vast majority of them struggle to (i) recognize the possible biases of politically charged tweets and (ii) distinguish between a news story and news-like advertisement.

Gaps in perceptions of fake news as a problem and gaps in the ability to meaningfully access corrective information across groups with different socioeconomic status are troubling and are not restricted only to the lay public. Pharmaceutical firms have found ways to influence—and often corrupt—medical research and publications, and key firms and organizations that affect physicians’ clinical choices. These include professional associations, continuing education programs, online professional networking groups, hospital administrators, insurers, organizations that create practice guidelines and diagnostic treatment categories, and patient advocacy organizations. Since manufacturers sell drugs in a market economy, promotion is inevitable, and some promotion is appropriate. Nevertheless, marketing is a source of institutional corruption, turning institutions away from their...
purpose, when it substitutes false or misleading information for reliable medical knowledge and when it co-opts physicians and researchers into marketing activities. There is clearly a need to educate professional school faculty and students about the social psychology underlying manipulative marketing. Additionally, the rise of pharmaceutical-firm-funded university research changes the social context of research, and along with it, the opportunities and constraints on researchers.

There are many ways to counter the onslaught of misinformation. One good way is to ensure that our professional charges—students, interns, residents, mentees, and others—have a better grasp on what constitutes good evidence and how to spot inaccurate and incomplete information, in print or online. Another means, summarized by Hill, is that we should “enhance science literacy in our world; one place to start is by doing a better job of teaching the scientific method in our schools so that the lay public is aware that science is accomplished in fits and starts, but, in the end, gets it right.”

About the Author
Dr. Gary Besinque is a Pharmacist Evidence Analyst and Strategist at Kaiser Permanente (KP) Drug Information Services. Prior to joining the PEAS Group at Drug Information Services, he was a Pharmacist Specialist at KP’s Los Angeles Medical Center, practicing in Critical Care and Medical-Surgical areas and in MUE, Performance Improvement and Medication Safety. He earned a BS in Biochemistry with a Bacteriology minor at UCLA, completed the MS curriculum in Biological Chemistry at California State Los Angeles, and then earned his PharmD degree at University of Southern California (USC). He is an Adjunct Assistant Professor of Pharmacy Practice at USC. He has been an active participant at CPhA, CSHP, and AMCP, is a reviewer for JCPPh, JMCP, and CJHP, and has served on the Editorial Committees of all three. At present, he is also an elected officer of CSHP and its Southern California affiliate chapter. Dr. Besinque has no bias to report.
