

## Letter to Editor

# Medical misinformation in the digital age: current challenges and future directions

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Dear Editor,

Medical misinformation is a complex issue influenced heavily by the concept of health literacy levels and is defined as the claim of health-related fact(s) that does not align with evidence-based scientific consensus<sup>1</sup>. Left unchallenged, it could have devastating outcomes for public health, and may present significant challenges for the implementation of future health prevention and promotion interventions<sup>1</sup>.

In the rise of the digital age, therein arises the unique challenges of the online landscape for medical misinformation. Public social media forums provide a unique global public platform to anyone who wishes to utilise it, with users able to create and upload content to a global audience free of charge, with minimal to no consideration for the wider societal impacts. According to data from the World Bank, approximately 60% of the global population were internet users in 2020<sup>2</sup>, with the number of non-internet users gradually declining in recent years. However, the Office for National Statistics rightfully indicates that internet use does not equal digital inclusion<sup>3</sup>. The Tech Partnership Basic Digital Skills framework highlights the five key skills that quantify “digital inclusion”: managing information, communicating, transacting, creating, and problem solving<sup>4</sup>. At present, Ofcom

estimates that 40% of adults do not currently possess the necessary digital literacy skills to critically assess online content, and studies have found a positive correlation between the use of social media as an information source and COVID-19 conspiracy beliefs<sup>5</sup>. Additional studies have also found evidence to suggest that vaccine hesitancy is linked with lower levels of overall health literacy<sup>6,7</sup>. Further to this, Okan et al proposed the notion of health literacy being the “social vaccine” to future public health emergencies as a health promotion and preventative intervention tool<sup>8</sup>.

Social determinants of health i.e., socioeconomic status, age, sex, culture, and environment are identified as key variables to the development of [digital] health literacy<sup>6</sup>. However, van Kessel et al suggest that the approach to tackling the disparities in [digital] health literacies may need to change, with a reported 24% of the UK population viewing health from an individualist perspective as opposed to an ecological stance<sup>7</sup>. The conversation of digital health literacy is a complicated one, particularly following the rise of the ever-evolving culture of social media celebrities or “influencers”<sup>9</sup>. Evidence suggests the overarching appeal of social media influencers (SMI’s) to be their perceived autonomy and “close” relationship with their audience<sup>9,10</sup>. In the context of public health, “patient influencers” are an

emerging phenomenon, whereby the influencer shares their lived experiences within the context of a health condition and/or disease with their audience<sup>9,10</sup>. Willis et al utilised the Health Belief Model to identify common themes amongst the way in which patient influencers communicate to their audience regarding prescription medications and concluded that they may be acting as “health education agents” whilst also building a supportive community for those with similar experiences or diagnoses<sup>9</sup>. However, the ethics surrounding patient influencers as direct-to-consumer marketing agents remains a concern, with Butler and Fugh-Berman calling for the increased regulation of sponsored medical content, most notably in the case of for-profit pharmaceutical product sponsorships<sup>11</sup>. As patient influencers remain a fairly early phenomenon, further research is warranted to further identify their role in the case of health literacy and medical misinformation<sup>11,12</sup>.

In conclusion, medical misinformation has the capacity to cause undoubted harm to public health if left unchallenged, particularly in the employment of health prevention and promotion interventions<sup>13,14</sup>. To mitigate the harmful effects of infodemics such as the one seen with the COVID-19 pandemic, it is first advised to increase individual ability to detect reliable vs unreliable information sources and increase health literacy levels through education and communication initiatives<sup>15,16</sup>. Policy makers should consider the need for legislation combating the dissemination of medical misinformation, per Mamak’s argument for the criminalization of [online] medical fake news<sup>16,17</sup>. Authors of scientific research should, in good faith, heed the advice of Bergstrom’s “Eight rules to combat medical misinformation” to aid in mitigating the potential for their work to be misrepresented or misinterpreted in the popular media<sup>18</sup>. Lastly, the continued support of government-led policies to help

target low levels of [digital] health literacy, such as the UK government’s “Online Safety Bill” should be prioritised to ensure that public health efforts are leading with evidence-based science without being undermined by [online] misinformation campaigns<sup>19</sup>.

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