OPINION PIECE

SOCIAL MEDIA AND SCIENCE:

A DOUBLE-EDGED SWORD OF (MIS)COMMUNICATION?

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ABSTRACT

Hailed as an indispensable tool for 21st-century communication, online media platforms have played major roles in the proliferation of knowledge worldwide. However, this new outlet of opportunity is not without its drawbacks to consider. With social media continuing to introduce new priorities to communicators, information becomes vulnerable to the fast click approaches to writing, sacrificing the quality of written work to achieve a wider digital reach. At the same time, healthcare professionals themselves become the subjects of scrutiny and distrust, competing with digital actors to share information with the public. Consequently, the negative side of social media makes itself evident amidst the recent global pandemic, illustrating the power that rumours may have on influencing overall health and safety. With this as the case, necessary conversations pertaining to the dangerous nature of social media must be held to both maximize awareness and allow for the avoidance of misinformation.

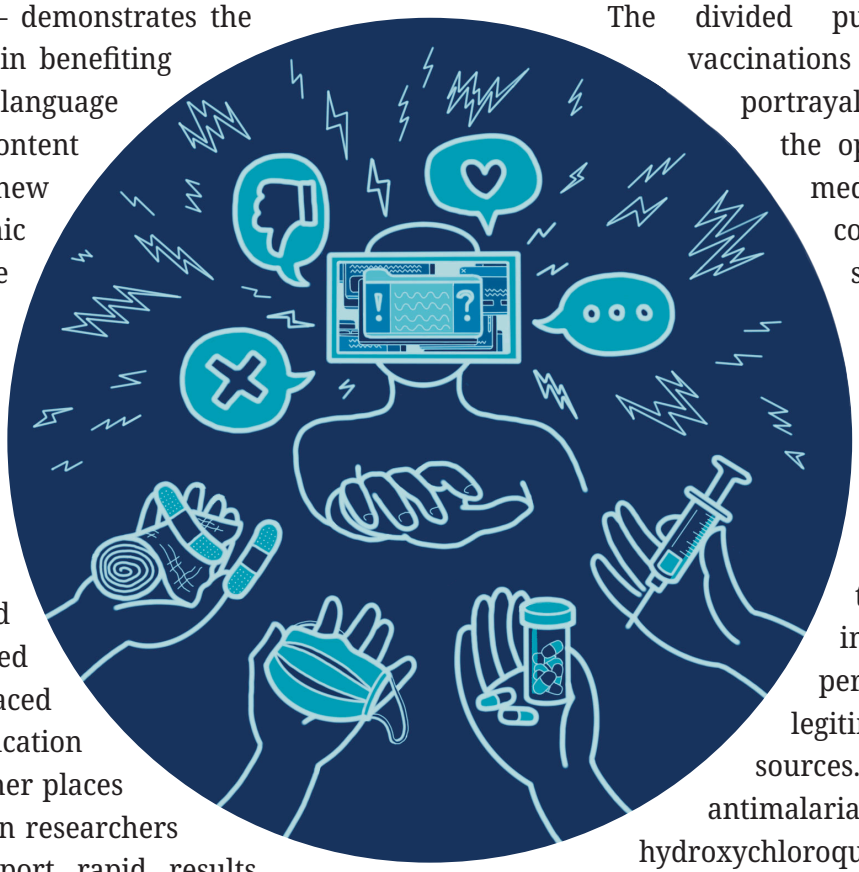
INTRODUCTION

Throughout history, communication has played a pivotal role in defining humanity's view of the wider world. From early storytelling to written works, the proliferation of knowledge has become a driving force behind society's continual advancement and growth.[1] Naturally, the modern era presents no exception to this pattern. Housing over 4.57 billion users worldwide, the internet has revolutionised the global community and redefined social interactions.[2] Now, with the number of social media users projected to reach about 42.3% of the world's population by 2022, a newfound audience of millions has become the norm.[3] With this as the case, whether by expanding social networks, facilitating large scale collaboration, or offering technological support, the internet has certainly introduced significant changes to its users' social, psychological, and physical experiences.[1] However, for health researchers, a double-edged sword of both opportunity and risk awaits. While academic communicators are now able to both expand their reach and facilitate two-way public conversations, the open nature of the internet allows for an equal, if not greater, amount of misinformation to arise.[4] With this as the case, there is a clear need to understand social media, not only as a valuable communication outlet but also as a powerful tool that must be used with caution. With these newfound conversations leading the way, the importance of safe, effective digital communication can rise to the forefront of the online agenda and allow for positive progress.

DISCUSSION

Of the many benefits introduced alongside social media, the sensationalization of science was not one of them. Often, the nature of social media as a "fast-click" platform has led to the prioritization of

controversy, exaggeration, and shock value in research.[5] With scientific reporters presenting media in an emotionally charged manner, the resulting articles become pieces that are "highly surprising, and less likely to be correct."[6] In turn, this new approach has dangerous implications for the accuracy of research communication in the health field, as demonstrated by the inappropriate claims found with almost a third of the 525 papers in top obesity or nutrition journals.[7] Here, the use of language that indirectly implies the presence of a cause-and-effect relationship – most evidently in the abstracts and titles – demonstrates the widespread interest in benefiting from "click-worthy" language at the expense of content accuracy.[7] These new trends in academic communication are further as evidenced by research from Haber et al., where 34% of sample studies were found to use strong, exaggerated language and inaccurately reported results.[5] The fast-paced nature of communication on social media further places increased pressure on researchers to produce and report rapid results, potentially prompting the release of unfinished work onto the public stage.



With the threat of misinformation continuing to rise, the consequences of expanded, open platform sharing have also become increasingly evident in recent years. As the accessibility of the internet expands user networks, audiences that were once reserved for prominent media figures and professionals are placed within the reach of millions of online users.[8] Acting as a powerful tool for content creation, the internet thereby grants any user the ability to prominently share and popularize their thoughts with the public. However, this may have unforeseen consequences, as demonstrated the vast array of misinformation that has manifested during the onset of the COVID-19 pandemic. As noted in an analysis by Van De Linden et al., over 25% of the most popular coronavirus videos on YouTube – reaching over 62 million views – were found to contain misleading content.[9] In turn, this misinformation becomes more frequently shared through Twitter when compared to credible public health or scientific content, subsequently distorting public attitudes with scepticism and encouraging dangerous behaviour.[10]

The divided public opinions on vaccinations act as a direct portrayal of this case, where the open nature of social media has created fierce competition between scientific facts versus fiction on the efficacy of vaccines.

Furthermore, while these instances of misinformation may begin as rumours, they have dangerous implications on the perceived credibility of legitimate information sources. As an example, the antimalarial drug hydroxychloroquine, was just one of the many misleading "cures" to COVID-19 that was widely circulated by internet actors and self-proclaimed "healthcare professionals." Despite being quickly disproved by follow-up studies,[11] the widespread discussion surrounding this rumour demonstrates how easily the pretence of trustworthiness can be fabricated in the online world. As this digital network continues to expand, the once-clear distinctions between licensed professionals and public users become increasingly difficult to identify. Audiences once reserved for credible organizations are now subject to information arriving from a vast array of sources, with each competing to expand their

reach, influence, and impact on viewers.[12] The superficial nature of online authority only builds upon the issue, subjecting both parties—online actors and credible sources—to the intense scrutiny of the public eye. Consequently, the internet has become a maze of both truth and deception, serving to distort communication as opposed to enhancing it.

CONCLUSION

Evidently, in the face of a fast-paced online world, it is all too easy to become lost in the struggle to expand one's reach, meet public interests, and compete with the millions of other users on the internet. Therefore, it is essential to consider the tremendous potential of social media and the inherent risks associated. Moving forward, further investigation on the direct impacts of social media on public perceptions of science may be conducted on a more in-depth scale, exploring specific factors or techniques used to exert large-scale influence. This process can be formidable, but in transforming these challenges into opportunities for continued exploration, a future of innovation and truth will once again reclaim the online world.

Conflicts of Interest: The author, Zinnia Chung, is an editor on the JUHR Editorial Team but had no involvement in the peer-review process or decision to accept this article

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