Mitigating Health Misinformation: Potential Roles for Academic Libraries

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1. Introduction

False information can diffuse significantly "farther, faster, deeper, and more broadly" than true information.[1] The dissemination of false information could be intentional or unintentional, and that misinformation may address a variety of domains, including political, social, scientific, and health matters. Given the many forms of false information, we will focus on health misinformation to illustrate the definitions, implications, challenges, and potential mitigation roles for academic libraries.

2. Background

What is Misinformation?

Misinformation is false or misleading information that contradicts the best available evidence.[2, 3, 4] Misinformation may be unintentional, but disinformation is false information that people intentionally spread to deceive others.[5] Misinformation is related to other forms of information that may cause harm. There is **mal-information**, which may be factually correct but is shared in a way that is intended to harm,[6] as well as **invisible or silenced information**, specifically related to the unheard voices and perspectives of minoritized communities.[7] Additionally, **"fake news"** is a widely known form of false information that aims to resemble news media and journalism.[8]

Why is Misinformation Challenging to Mitigate?

Misinformation can be challenging to mitigate because people may not know that information is false when they use or share it. Furthermore,

misinformation has been politicized and may form elements of an individual's worldview, making it tougher to address.[9] Additionally, there are different types of misinformation to counteract. The Digital, Culture, Media and Sport Committee of the UK House of Commons has recognized six types of false information: fabricated content, manipulated content, impostor content, misleading content, false context of connection, and satire and parody.[10] In the health domain, the content of misinformation speaks to a wide range of topics, including immunology, epidemiology, medical technology, regulation, prevention, and interventions. For instance, CDC has listed common "myths" (i.e., misinformation) surrounding COVID-19 vaccines, which speak to these matters.[11]

What is Driving Health Misinformation?

Social media and networking sites are driving misinformation spread. Their limited regulation, lack of verification, and limited consequences for sharing false information are contributing factors.[12, 13] Moreover, algorithmically generated recommendations in social media can amplify specific messages and may not present alternative evidence or perspectives. This quality may lead to echo chambers and filter bubbles that fix people's existing views and knowledge (e.g., selected exposure and confirmation bias).[14, 15] Furthermore, Sarah Sobieraj observed that economic models in social and other media platforms reward engagement activities that may lead to misinformation spread.[16] The dissemination of misinformation is not limited to social media. For example, the open sharing of non-peer-reviewed research studies in preprint servers contributed to COVID-19 misinformation when news media cited unvetted findings.[17]

Negative Impacts on Human Health

With the rapid dissemination of new health information, especially during the COVID-19 pandemic, people may experience confusion and difficulty identifying credible information.[18, 19] As a result, misinformation proliferates, potentially sowing distrust in social

institutions and resistance to health interventions and public health precautions. Misinformation and disinformation have been significant setbacks to the COVID-19 pandemic response, having contributed to an increased risk of illness, mortality, disruption, and disorganization.[20] Given this negative impact, the Surgeon General characterizes health misinformation as a significant problem that affects all of society, and the WHO has named the situation an "infodemic."[21]

3. Strategies to Counteract Health Misinformation

Public Recommendations

In the United States, the Office of the Surgeon General and the Johns Hopkins Center for Health Security have proposed national strategies for counteracting health misinformation. Table 1 summarizes the key action areas of their recommendations.

Table 1. Strategies and recommendations for counteracting health misinformation

Office of the Surgeon General: Confronting Health Misinformation: The US Surgeon General's Advisory on Building a Healthy Information Environment[22]
- Equip Americans with the tools to identify misinformation   - Expand research that deepens our understanding of health misinformation   - Implement product design and policy changes on technology platforms   - Invest in longer-term efforts to build resilience against health misinformation   - Convene federal, state, local, territorial, tribal, private, nonprofit, and research partners [to explore the issue of health misinformation and its mitigation]

> **The Johns Hopkins Center for Health Security:** National Priorities to Combat Misinformation and Disinformation for COVID-19 and Future Public Health Threats: A Call for a National Strategy[23]
>
> - **Pillar 1:** Intervene against false and damaging content as well as the sources propagating it
> - **Pillar 2:** Promote and ensure the abundant presence and dissemination of factual information
> - **Pillar 3:** Increase the public's resilience to misinformation and disinformation
> - **Pillar 4:** Ensure a whole-of-nation response through multisector and multiagency collaboration

Opportunities and Challenges for Academic Libraries

Across both public strategies, there are common themes that present opportunities for academic library participation.

- **Theme 1:** By adopting a **public strategy** with collaborative initiatives, libraries could build on existing efforts to share trustworthy information and broaden our reach.

- **Theme 2:** By involving a **broad range of stakeholders,** libraries could build the social capacity to address the scale and speed of misinformation spread. The stakeholders include social media and technology companies, news organizations and journalists, educators and educational institutions, health professionals, government (including policymakers, national security organizations, and public health agencies), researchers, scientific and public health institutions, funders, foundations, and members of the public.[24] [25] These different parties reflect the "whole-of-society effort" advocated by the Surgeon General.

- **Theme 3:** By building people's awareness of misinformation and their skills to detect it, libraries could support **misinformation resilience** in communities. Misinformation resilience relies on

information-, health-, scientific-, media-, and digital-literacy skills.[26] It includes the ability to detect misinformation, verify information (i.e., fact-checking), find credible information, share information ethically, and engage with people who share or give credence to misinformation.

These themes align with the established library values of education, literacy development, information dissemination, and collaboration. Furthermore, the Surgeon General recognized the potential for libraries to develop health literacy among communities, emphasizing the value of our information resources and educational services to address misinformation.[27] In practice, recent library initiatives to deal with misinformation center on resource guide development, referral to fact-checking sources, information-literacy programs, and advocacy to mitigate misinformation.[28]

While libraries have a role, counteracting misinformation can be challenging for our organizations. Firstly, there is a call for proactive interventions to remove or control the spread of false information, including platform-based detection and crowdsourced identification. An example is the WHO's campaign for citizens to report health misinformation.[29] These interventions are necessary since the rapid rate of health-misinformation spread requires an equally quick response. However, libraries do not have a history in this role. Secondly, misinformation can spread heavily on social media and networks. People may not find library resources and services for unbiased and credible information in their preferred online networks. Lastly, misinformation is often framed in a more "emotional and sensational manner."[30] Libraries may therefore need to address sensitive issues like people's emotions and biases in dynamic information environments.

As the COVID-19 pandemic continues, more opportunities may arise for academic libraries to engage with health misinformation. For instance, on August 31, 2021, the San Diego County Board of Supervisors declared health misinformation a public health crisis.[31, 32] Focused on the negative

impact of misinformation on COVID-19 prevention and vaccination, the Board approved recommendations aligned with the Surgeon General's advisory.

In support of the county's campaign against health misinformation, the San Diego Circuit consortium libraries aim to collaborate and use the strategies described in this article. Circuit is a consortium comprising private and public academic libraries and public libraries. The members include San Diego County Library, San Diego Public Library, San Diego State University, UC San Diego, University of San Diego, and California State University San Marcos. Our consortium is partnering in a coordinated and strategic way to counteract misinformation regionally. In planning our initiatives, the steering team emphasized the benefits of building on members' diverse expertise with instruction, resource sharing, and community engagement for maximum public impact.

4. Future Directions

Looking towards the future, De Paor and Heravi have proposed a framework for libraries to address misinformation, consisting of the following four action areas.[33]

Advocacy. De Paor and Heravi posit that libraries should promote their traditional role as safe and inclusive spaces people can turn to for information support. By leveraging our historic role as a trusted organization in a fragmented information ecosystem, libraries can address misinformation in a unique and impactful way. To act on this approach, libraries might promote our resources and services for information-literacy development and provide factual information to address misinformation. In support of this strategy, our outreach activities may need to shift to social media and networking sites, where misinformation can spread rapidly.

Revisit and reevaluate library values. While libraries have traditionally taken a neutral stance around information sharing, our

organizations may need to reexamine our role in intervening and limiting the spread of misinformation. There are calls for tools and processes that detect, flag, and restrict misinformation (Table 1). However, these functions are opposite to libraries' traditional support for the unrestricted use of information. Additionally, libraries need to examine the value of the open flow of information against the reality that unvetted information may go unchecked in our information ecosystem. While libraries could incorporate our information resources into social media and networking sites to provide context for suspected misinformation, these partnerships may be challenging to forge due to licensing restrictions and organizational capacity. Moreover, would additional information sharing be helpful, or would it intensify overload and confusion?

Collaboration. Libraries can contribute to a "whole-of-society" effort to mitigate misinformation by cooperating with diverse stakeholders. We might leverage our connections with users and communities, serving as a rapid communication channel that promotes information resources and services to help citizens respond to current events. Furthermore, there are opportunities for academic libraries to engage with the public to develop information literacies across all levels of society—perhaps through public and school library partnerships. Additionally, academic libraries have opportunities to work with government agencies, public organizations, and community groups— particularly by strengthening our presence in isolated or marginalized communities—as recommended in the proposed national strategies.

Reframe information literacy. De Paor and Heravi recommend positioning misinformation resilience as an information-literacy outcome and helping individuals develop the skills to manage the rapid and fragmented dissemination of online information.[34]

While established information-literacy programs help users locate, evaluate, interpret, and effectively use information, there is an increasing need to integrate scientific, digital, and media literacies as a toolkit for misinformation resilience. Mackey and Jacobson propose

"metaliteracy" as another important ability to address the dynamism of online information ecosystems.[35] This ability combines media literacy, digital literacy, visual literacy, cyberliteracy, transliteracy, and information fluency. Metaliteracy may help people engage with online environments responsibly and detect manipulated or doctored information.

Furthermore, critical evaluation skills for information could include metacognitive and analytical skills, such as fact-checking, information synthesis, and recognizing a vulnerability to misinformation. Effective information evaluation may also depend on scientific and health research literacies to interpret methodologies and conclusions. By building these skills, libraries could help people succeed at flagging and reporting suspected misinformation,[36] engaging in ethical sharing (e.g., "if you're not sure, don't share"[37]), and addressing health misinformation with our family, friends, and community.

5. Conclusion

Misinformation can spread quickly with a negative impact on individuals, society, and public health. Although misinformation comes in various forms and spreads through different channels, libraries can play an essential role in mitigating its threat through a whole-of-society collaboration. Academic libraries have opportunities to engage in advocacy, revisit and reevaluate library values around responsible information sharing, collaborate with new partners to engage our broader society, and reframe information literacy with new skills for misinformation resilience.

Endnotes

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