

“Strategies To Combating Health Misinformation On Social Media Platforms - A Narrative Review”

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Abstract

Among various Internet services, social media platforms are used as the main source of information by people whereby they interact with each other to create, share, and exchange information among virtual communities. Health misinformation intervention is crucial for protecting public health, encouraging informed decision-making, and aiding in the restoration of trust in healthcare institutions. Health misinformation intervention demands a comprehensive strategy that operates on multiple fronts: Government, Organizational, and Individual levels. In this review, a bibliographic search was done in PubMed, Medline, EMBASE, Scopus and Web of Science databases for English articles that were published in last five years.

Key Words: Misinformation, Health Misinformation, Health Disinformation, Social media platforms, Approaches.

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I. Introduction

Internet users have been increasing over time. Over the past 25 years, the Internet and social media have rapidly become ubiquitous in daily life.^[1] More than four billion unique users joined the realm of the internet, and the numbers are increasing day by day.^[2] Mobile computing technologies have given birth to abundance of social media mobile applications. As a result, individuals in large numbers are joining social media. More than 3.2 billion users across the globe are leveraging the services of social media applications.^[3] Twitter, Facebook, WhatsApp, Instagram, and YouTube are the social media giants which engage users daily in unimaginable numbers.^[3] Online Social Networks are a double-edged sword.^[4] If misinformation spreads through these networks, it can have severe consequences. Misinformation is worse than an epidemic: It spreads at the speed of light throughout the globe and can prove deadly when it reinforces misplaced personal bias against all trustworthy evidence.^[4] It is estimated that 80% of users of Social Media Platforms (SMP) regularly search for medical information and 45% of these individuals would consider seeking a second medical opinion based on the information seen on Social Media Platforms (SMP).^[5] Intervening in health misinformation is essential for safeguarding public health, promoting informed decision-making, and restoring trust in healthcare institutions. Additionally, such interventions are vital in preventing panic and anxiety during health crises by delivering clear and factual information. Addressing health misinformation requires a comprehensive strategy that functions on multiple levels: government, organizational, and individual. The merit of this narrative review is that it provides a collective description of the scattered literature by emphasizing the strategies to addressing health related misinformation on social media.

II. Material And Methods

To achieve the objectives of this review, a structured approach was followed for identifying and selecting relevant studies. A comprehensive literature search was conducted to gather articles that addressed health-related misinformation on social media platforms and the strategies used to mitigate it. The selection process was guided by well-defined inclusion and exclusion criteria to ensure that only relevant, recent, and high-quality studies were considered for review. The detailed criteria and search strategy are presented below.

Inclusion Criteria

1. Articles published within the last five years.
2. Articles written in English.
3. Peer-reviewed journal articles and original articles.

4. Articles addressed health misinformation on social media platforms, including detection, spread, and impact on public health.
5. Articles that explored the strategies and interventions employed to combat health misinformation on social media.
6. Articles that focused on the use of social media as a platform for the dissemination of health-related misinformation or strategies for detecting such misinformation.

Exclusion Criteria

1. Duplicate publications
2. Technical reports
3. Case reports

Search Strategy

A computerized search was done in PubMed, Medline, EMBASE, Scopus and Web of Science databases for English articles that were published in last five years that contained the keywords “Misinformation”, “Health Misinformation”, “Health Disinformation” “Social Media Platforms”, “approaches” in the title. In addition to the common limiters AND, OR, and NOT Boolean operators were to restrict the keyword searches. In total, 40 research articles were collected. After removing duplicates, 30 articles were screened, and 25 potentially eligible articles were retrieved.

III. Strategies To Addressing Health Misinformation On Social Media Platform

Health misinformation intervention demands a comprehensive strategy that operates on multiple fronts: Government, Organizational, and Individual levels (Fig. 1).^[6]

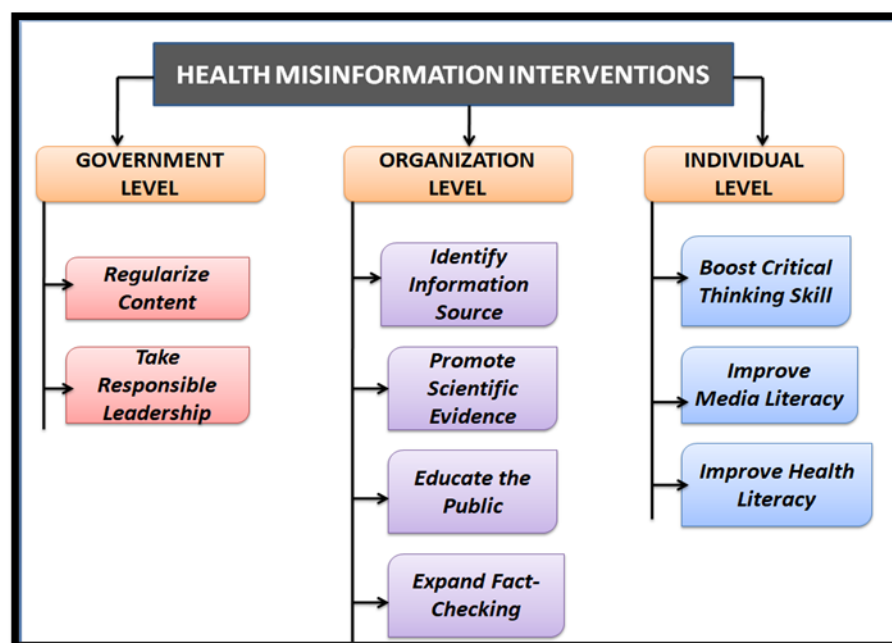


Fig.1.Hierarchical Overview of Health Misinformation Interventions.^[6]

Government-Level Intervention

Government intervention in health misinformation including regulatory measures to hold accountable those spreading false information, collaboration with tech companies to combat misinformation online, support for fact-checking organizations, investment in health literacy programs, regulation of healthcare professionals, funding for research and monitoring, and international cooperation to address the global nature of the issue.

Regularize Content-

Balancing the scale between preserving the right to freedom of speech and suppressing the spread of misinformation has been a long-standing issue. Using legislation to regularize misinformation online is a double-edged sword, the government officials have to be very careful about not restricting freedom of expression.^[6]

Press Information Bureau (PIB):

Its primary objective is to act as a deterrent against the creators and disseminators of false information while providing an accessible avenue for individuals to report suspicious content related to the Government of India for fact-checking. By addressing complaints exclusively concerning the Union Government, its Ministries, Departments, and Public Sector entities, the Unit ensures a focused effort in verifying and fact-checking information pertinent to governmental affairs.^[7] The PIB Fact Check Unit does not limit itself to complaints only related to social media. Instead, it verifies the factual authenticity of any information related to the Government of India, irrespective of the platform. It relies only on official sources of information.

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:

Social media platforms must promptly remove misinformation when notified by authorities, issue warnings to educate users, and may face fines for non-compliance. Repeated violations could lead to the loss of intermediary status, increasing their liability. They are also required to use automated tools to detect and remove unlawful content.^[8]

The fake news (prohibition) bill, 2019:

The bill aimed to implement stricter measures to address the proliferation of fake news, which included imposing fines and imprisonment on individuals found guilty of generating or spreading false information via digital platforms. The Fake News (Prohibition) Bill, 2019 in India has been proposed but has not yet been passed into law.^[9]

Indian Penal Code:

Deliberate dissemination of false or inflammatory information aimed at outraging religious sentiments or insulting religious beliefs of any community can be punishable under the appropriate sections of the Indian Penal Code.^[10]

Take Responsible Leadership-

Government officials have a significant influence on shaping social values and impacting the preferences or beliefs of their followers.^[11] Therefore public leaders need to prioritize promoting evidence-based scientific facts over the political agenda.^[6] These provide accurate information and resources through their website and social media channels, effectively combating false narratives.

Centers for Disease Control and Prevention (CDC):

The CDC in the United States has been actively involved in countering misinformation related to public health, including COVID-19.^[12] They provide accurate information and resources through their website and social media channels, effectively combating false narratives.

World Health Organization:

World Health Organization (WHO) disseminates accurate and up-to-date information to the public through its website and social media channels. By providing reliable information from trusted sources, WHO helps counter false narratives and combat misinformation related to health issues. WHO develops evidence-based guidelines and recommendations on various health-related topics, including infectious diseases, vaccines, and public health measures. Governments around the world rely on WHO's expertise and guidance to formulate policies and interventions to address health misinformation.^[13]

The Indian Council of Medical Research (ICMR):

ICMR and other related organizations in India play a crucial role in providing scientific guidance, conducting research, and formulating policies related to public health. Whether they exhibit responsible leadership depends on various factors, including their adherence to evidence-based practices, transparency in decision-making, and effectiveness in communicating with the public.^[14]

Ministry of Health and Family Welfare (MoHFW):

The MoHFW is responsible for formulating and implementing policies and programs related to public health and healthcare delivery in India. It plays a central role in coordinating government interventions, managing health emergencies, and overseeing the healthcare system's functioning.^[15]

National Health Mission (NHM):

The NHM is India's flagship public health program, aimed at strengthening health systems and improving access to essential healthcare services, particularly in rural and underserved areas, through various

initiatives related to maternal and child health, immunization, disease control, and health infrastructure development.^[16] By providing accurate information and resources through their website and social media channels, NHM demonstrates responsible leadership in effectively combating false narratives.

National Centre for Disease Control (NCDC):

The NCDC is the apex institution responsible for disease surveillance, outbreak investigation, and control of communicable diseases in India. It provides technical expertise and support to government agencies at the central and state levels in managing disease outbreaks and public health emergencies. Through its proactive approach and technical prowess, NCDC demonstrates leadership by swiftly coordinating responses, disseminating accurate information, and implementing effective control measures to safeguard public health.^[17]

Indian Medical Association (IMA):

The IMA is a professional association of doctors in India, plays an important role in advocating for public health policies, promoting medical ethics, and supporting healthcare professionals. It collaborates closely with government agencies, providing valuable input on healthcare policies and interventions.^[18] Through these efforts, the IMA demonstrates leadership by advocating for evidence-based practices, ethical standards, and equitable healthcare access, thereby contributing significantly to public health advancement in India.

Organization-Level Intervention

At the organization level, addressing health misinformation requires concerted efforts from health organizations, social media platforms, and fact-checking organizations.

Identify Information Source-

Despite efforts like algorithmic downranking and content moderation, the effectiveness of measures like adding information sources to warn users varies widely. Social media platforms like Twitter have introduced source alerts, such as “Determined by Twitter to be a misleading account”, to tackle misinformation.^[6] The impact of such alerts varies based on factors like user partisanship, social media platform, and the specificity of the alert. Additionally, whether users notice the information source, significantly influences its effectiveness.

Promote Evidence-Based Information-

It is crucial for the medical research community to publish evidence-based and reliable information for the public.^[6] To tackle health misinformation, the “Infodemic Response Checklist” focuses on promoting better media and health communication strategies.^[19] These efforts involve collaboration with healthcare professionals to ensure accurate and reliable information reaches the public effectively.

Enhance Accuracy Of Information Through Fact-Checking –

In the battle against health misinformation, ensuring factual accuracy is paramount, necessitating significant contributions from fact-checking efforts. There are various checklists/guidelines for fact checking are as follows:

- i. Fact-checking Guidelines**
- ii. Fact-checking Checklists**
- iii. Fact-checking Tools**

Fact-checking Guidelines:

MIL CLICKS Guidelines-

The United Nations Educational, Scientific and Cultural Organization–UNESCO ‘MIL CLICKS’ social media initiative for promoting media and information literacy is helping people acquire key skills related to media and information literacy in their normal day to-day use of the Internet and social media. ‘MIL CLICKS’ is an acronym that stands for ‘Media and Information Literacy: Critical-thinking, Creativity, Literacy, Intercultural, Citizenship, Knowledge and Sustainability’.^[20]

International Federation of Library Associations’ (IFLA) Guidelines-

It is widely accepted and used in fake news detection checklists. It comprises eight steps: (i) “consider the source”, (ii) “check the author”, (iii) “check the date”, (iv) “check your biases”, (v) “read beyond”, (vi) “seek supporting sources”, (vii) ask “is it a joke?”, and (viii) “ask the experts”.^[21]

World Economic Forum Guidelines-

This is the three-step guidelines for debunking misinformation. The three steps are: (i) “embracing uncertainty responsibly”, (ii) “asking where the information is coming from?” and (iii) “determining who is backing up the claim”.^[22]

Fact-checking Checklists

CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose)-

It focuses on whether an information resource is ‘current’ and up to date, ‘relevant’, ‘accurate’, and ‘telling the truth’, and directs information evaluators to seek answers to questions such as who is the ‘author’ (who wrote or compiled the resource under investigation), and what is the resource’s ‘purpose’ or why was it created.^[23]

Infodemic response checklist-

An “infodemic response checklist” is to help overcome the challenges posed by the infodemic.^[96] Their checklist recommends a number of mitigatory actions, including (i) offering more exposure or ‘airtime’ for medical professionals and scientists, (ii) verifying the social media accounts of scientists, medical professionals and public health officials, (iii) sharing scientific evidence, (iv) promoting the Web sites of public health organisations via search engines, (v) monitoring engagement on social media platforms, (vi) developing infographics and educational material, (vii) addressing minorities, racial, and ethnic differences, (viii) adopting empathy in social media communication, (ix) promoting dialogue and sharing of personal experiences, (x) improving coping skills against mental health stressors, and (xi) boosting investment in health communication research.^[19]

Fact-checking Tools:

- ❖Google’s Fact Check Tool
- ❖FactChecker.in
- ❖Boom Live
- ❖Quint’s WebQoof
- ❖Alt News
- ❖Fact Crescendo
- ❖India Today Fact Check
- ❖Times Fact Check

Individual-Level Intervention-

The actions that social media users can take to prevent themselves become the victim of online health misinformation.

Enhance Critical Thinking Skills –

Enhancing critical thinking skills is crucial in combating the spread of misinformation, as research indicates that both misinformation and its correction can be retained in memory, but the correction tends to fade over time.^[6] Pause and think critically could mitigate the spread of misinformation.

Improve Health and Media Literacy-

People possessing good health literacy usually have more skills to manage their health in a better way compared to those with low health literacy skills. The mere presence of Health Literacy is not sufficient with regard to digital offerings in healthcare and must be expanded to include the concept of Electronic/Digital Health Literacy (eHL/ dHL). With ‘digital’ added to the formula, people can anticipate wider accessibility of reliable health information, improved healthcare quality and reduced healthcare costs. Groups at higher risk need to be educated and assisted and technology designed with accessibility by all in mind.^[24]

IV. Conclusion

Individuals increasingly prioritize social media over professional medical advice across various health domains, including communicable diseases, chronic conditions, and treatment options. This shift underscores serious concerns about the potential impact of misinformation on both individual health outcomes and public health at large. When misinformation spreads unchecked, it undermines efforts to disseminate accurate information and implement evidence-based interventions, potentially delaying or weakening public health responses. Psychologically, exposure to health misinformation can cause confusion, anxiety, and stress among individuals seeking reliable health information. This can further complicate decision-making processes and contribute to overall public uncertainty during health crises. Addressing health-related misinformation requires a

multifaceted approach. Effective strategies involve collaboration between public health agencies, policymakers, and social media platforms to develop and enforce policies that promote the dissemination of accurate health information while mitigating the spread of misinformation. Initiatives to enhance health literacy, particularly among vulnerable populations with limited access to reliable information, are also crucial. By improving the ability of individuals to critically evaluate health information, public health efforts can better withstand the challenges posed by misinformation on social media, thereby safeguarding public health more effectively. Encouraging reflection and critical analysis of content can reduce the spread of false narratives. By promoting transparency, accountability, and effective communication across these levels, the strategy aims to restore trust in healthcare information, minimize panic during health crises, and support informed decision-making among the public.

References

- [1]. Wang Y, Mckee M, Torbica A, Stuckler D, Systematic Literature Review On The Spread Of Health-Related Misinformation On Social Media. Soc Sci Med. 2019 Nov;240:112552. Doi: 10.1016/J.Socscimed.2019.112552.
- [2]. Vyas P, Vyas G, Liu J, Proliferation Of Health Misinformation On Social Media Platforms: A Systematic Literature Review. Issues In Information Systems, 2021; 22(3): 73-85.
- [3]. Khan S, Snehkunj R, Health Misinformation On Social Media: A Review Analysis, International Journal Of Research Publication And Reviews, 2022;3(12): 111-115.
- [4]. Aïmeur E, Amri S, Brassard G. Fake News, Disinformation And Misinformation In Social Media: A Review. Soc Netw Anal Min. 2023;13(1):30. Doi: 10.1007/S13278-023-01028-5. Epub 2023 Feb 9. PMID: 36789378; PMCID: PMC9910783.
- [5]. Cristiane M, Oliveria M, Health-Related Fake News On Social Media Platforms: A Systematic Literature Review, New Media And Society, 2021, 1-23 DOI: 10.1177/14614448211038762.
- [6]. David AB Et AL., Weaponized Health Communication: Twitter Bots And Russian Trolls Amplify The Vaccine Debate. American Journal Of Public Health (2018), 108, 10,1378–1384.
- [7]. Ramazanoglu M, The Relationship Between High School Students' Internet Addiction, Social Media Disorder, And Smartphone Addiction, World Journal Of Education, 2020; 10(4), 139-148.
- [8]. Jan M, Soomro SA, Ahmed N, Impact Of Social Media On Self-Esteem, European Scientific Journal August, 2017;13(23), 329-341.
- [9]. Smailhodzic E, Hooijisma W, Boonstra A, Langley DJ. Social Media Use In Healthcare: A Systematic Review Of Effects On Patients And On Their Relationship With Healthcare Professionals. BMC Health Serv Res. 2016 Aug 26;16(1):442. Doi: 10.1186/S12913-016-1691-0. PMID: 27562728; PMCID: PMC5000484.
- [10]. PIB Fact Check Unit, Press Information Bureau, Government Of India, Available At [<https://Pib.Gov.In/Aboutfactcheck.aspx>], Last Accessed Date: 20/7/2024.
- [11]. The Future Of Infodemic Surveillance As Public Health Surveillance, SUPPLEMENT ISSUE, 2022, Volume 28 Available At: [<https://wwwnc.cdc.gov/eid/article/28/13/22-0696>]
- [12]. WHO Guidelines, World Health Organization, Available At: [<https://www.who.int/publications/who-guidelines#:~:Text=WHO%20Guidelines&Text=The%20development%20of%20global%20guidelines,Practice%20or%20public%20health%20policy.>] Last Accessed Date: 20/7/2024.
- [13]. Achievements, Indian Council Of Medical Research, Available At: [<https://Main.Icmr.Nic.In/Content/Achievements>], Last Accessed Date: 20/7/2024.
- [14]. Ministry Of Health And Family Welfare, Ministry Of Health & Family Welfare Initiatives & Achievements-2023, Available At: [<https://Pib.Gov.In/Pressreleaseiframe.aspx?PRID=1990674>], Last Accessed Date: 20/7/2024.
- [15]. Healthcare Schemes, Press Information Bureau Government Of India Ministry Of Health And Family Welfare, 2019 Available At: [<https://Pib.Gov.In/Pressreleaseshare.aspx?PRID=1576128>], Last Accessed Date: 20/7/2024
- [16]. About National Institute Of Communicable Disease, National Centre For Disease Control, Directorate General Of Health Services, Ministry Of Health & Family Welfare Government Of India, Available At: [<https://Ncdc.Mohfw.Gov.In/>] Last Accessed Date: 20/7/2024
- [17]. Indian Medical Association, Available At: <https://www.ima-india.org/ima/left-side-bar.php?pid=299#:~:Text=The%20Association%20was%20started%20in,And%20Medica%20Education%20in%20India.>
- [18]. Jack N, Kimberly G, State Media Warning Labels Can Counteract The Effects Of Foreign Misinformation. Harvard Kennedy School Misinformation Review, 2020,
- [19]. Brennen JS, Simon FM, Howard PN, Nielsen RK. Types, Sources, And Claims Of COVID-19 Misinformation. University Of Oxford. 2020,1-13
- [20]. Mil Clicks Social Media Initiative, United Nations Educational, Scientific And Cultural Organization, Available Online: [<https://en.unesco.org/milclicks>], Last Accessed Date 21/7/2024.
- [21]. International Fact-Checking Network's (IFCN) Code Of Principles. Available At: [<https://ifcn.codeofprinciples.poynter.org/>], Last Accessed Date: 20/7/2024.
- [22]. Hazelton A. How To Read The News Like A Scientist And Avoid The COVID-19 'Infodemic' World Econ. Forum. 2020 Available At: [<https://www.weforum.org/agenda/2020/03/how-to-avoid-covid-19-fake-news-coronavirus/>]. Last Accessed Date: 20/7/2024.
- [23]. Evaluating Information: Applying The CRAAP Test. Meriam Library, California State University, 2010, Chico, CA, USA,. Available Online: [https://www.csuchico.edu/lins/handouts/eval_websites.pdf], Last Accessed Date: 20/7/2024.
- [24]. Ciecierski HT, Singh R, Axt M, Brenner S, Barteit S. Artificial Intelligence For Strengthening Healthcare Systems In Low- And Middle-Income Countries: A Systematic Scoping Review. NPJ Digit Med. 2022 Oct 28;5(1):162. Doi: 10.1038/S41746-022-00700-Y. PMID: 36307479; PMCID: PMC9614192.