Int J Med. Public Health. 2022; 12(2):46-49
A Multifaceted Peer Reviewed Journal in the field of Medicine and Public Health
www.ijmedph.org

Review Article

Developing Counter Strategy for Information Warfare in Health Sector–Sifting 'Real' from 'Fake' News

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ABSTRACT

Information warfare (IW) involves manipulation, destruction or denying access to information altogether, while maintaining the target's trust. Psychological operations, a type of IW, concerns majority of public as it aims to degrade their morale through infodemic and fake news. Fake news related to healthcare was present even before the COVID-19 pandemic. There is a broad range of content that comes under it, like communication of inaccurate information with or without any intention to cause harm, mistaken interpretation of satires and information spread with definitive socio-political agenda. We discuss here the various facets of fake news including its burden in the health sector, pathogenesis, the different psychological perspectives of its spread and strategies to counter it.

Key words: Communication, Health literacy, Information literacy, Journalism, Psychological warfare.

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History
- Submission Date: 31-12-2021;
- Revised Date: 10-01-2022;
- Accepted Date: 27-01-2022.

DOI : 10.5530/ijmedph.2022.2.10

Article Available online
http://www.ijmedph.org/v12/i2

INTRODUCTION

Information Warfare (IW) involves "actions aimed at achieving information superiority" without the target's awareness, leading to the target making decisions against their own interest using data as the primary weapon.[1] This may be done by manipulating, destroying or denying access to the data altogether, while maintaining the target's trust. These developments are particularly vital in the current age where information is probably worth much more than any other commodity. Although the term IW is most commonly used in military affairs, it is rapidly gaining significance in other sectors like public health.

Types

Broadly we can classify IW into three types:[2]

a) Electronic warfare:

This involves crippling of communications systems by disrupting or neutralizing electromagnetic transmissions. It may not always involve internet or various parts of the electromagnetic spectrum (such as radio or microwaves); even placing defective parts into computer hardware to physically damage the whole system is included in this type of IW.

b) Cyberwarfare:

This refers to the use of cyber spaces to launch targeted attacks at persons, political agencies or nations. For example, creating a malware that automatically adds realistic, malignant-seeming growths to imaging scans that can then be used by attackers to target a politician, trick them into believing they have a serious illness and cause them to withdraw from election to seek treatment. Another example of this is ransom ware, which is a malware like a virus, worm or Trojan that is made to infect systems and files and renders them inaccessible until a due ransom gets paid. A prominent ransom ware that affected the health sector was the WannaCry attack in 2017 that hit the National Health Services in the United Kingdom leading to delays and cancellations of medical appointments.

c) Psychological operations

This is the type which concerns the majority of general public as it aims to degrade the morale and well-being of a large proportion of a nation's citizens using social media and news outlets by spreading false information.[3] The intended result in this case is a state of panic and fear. Trust in information and media plays a major role in psychological warfare.

Infodemic

It is an overabundance of information that makes it hard for people to find trustworthy sources and reliable guidance when they need it.[4] Infodemic usually comprise a mixture of real and fake news. Most of the time, the abundance of information that is spread include deliberate attempts to disseminate wrong information. It has been described as a 'second disease' accompanying the COVID-19 pandemic as the spread of uncertainty, fear, and anxiety that occurred currently has been historically unparalleled.

Cite this article : Tanveer R, Gayathri S, Yuvaraj K. Developing Counter Strategy for Information Warfare in Health Sector–Sifting 'Real' from 'Fake' News. Int J Med Public Health. 2022;12(2):46-9.

Fake news

False or fabricated information, which looks credible, can be spread through word of mouth, traditional mass media or digital forms of communication like the social networking sites. While fake news is a term commonly encountered, many countries avoid using it while many have defined it quite elaborately.[5]

There is a broad range of content that comes under the banner of fake news concerning the health sector:

a) **Misinformation:** This term is used to describe false or inaccurate information that is communicated without any intention to cause harm.[6] One may spread it on social media simply in an attempt to be helpful to others like the belief that SARS-CoV-2 virus was being produced in a laboratory for use as a biological weapon.

b) **Disinformation:** This is false information that is deliberately created and shared to cause harm.[7] People may create vaccine disinformation in an attempt to promote their own belief systems or create social discord.

c) **Satire:** These are literary devices such as ridicule and irony to criticize elements of society like an incumbent government.[8] This can become misinformation if audiences misinterpret it as fact due to inherent manipulation of language that is intended to give an impression of truthfulness.

d) **Propaganda:** It is true or false information spread to persuade an audience, but with a definitive socio-political agenda and often with the help of websites, allied news portals and mouthpieces that support and spread it without critical reasoning.

Burden in Health Sector

Fake news related to healthcare was present even before the COVID-19 pandemic. In 2012-18, the broadly investigated themes involving misinformation were vaccination, Ebola and Zika Virus and nutrition.[9] Among the most frequently shared links on health issues, 40% contained fake news; out of which more than 20% of the dangerous links were generated by a single source.[10] During the COVID-19 pandemic, most of the fake news in India were circulated through videos (35%) followed by textual messages (29%). These contained doctored messages on a range of issues such as fake diagnosis and treatment, falsified quotes by celebrities with their photographs, and false notifications and lockdown guidelines.[11]

Pathogenesis

There are some psychological perspectives as to why snowballing of fake news occur.[12]

a) **False but commonly held beliefs:** When we read a news item that says "garlic soup will ward off coronavirus", we tend to believe it immediately. The knowledge about the potential anti-inflammatory and antimicrobial properties of garlic leads us to generalize that it might cure COVID-19 even though there is no evidence regarding its effectiveness against SARS-CoV-2.

b) **Cultivation theory:** Repeated statements receive higher truth ratings than new statements because it is easier to process - a phenomenon called the "illusory truth effect".[13] When we are repeatedly exposed to consistent fake news, our perceptions or beliefs can be modified, similar to how frequent advertisements modify shopping choices.

c) **Theory of negativity bias:** When we have activities of equal intensity, the things of negative/omissive nature have a greater effect on one's psychological state than the positive/commissive ones.[14] Avoidant behaviors like giving up poultry consumption for a while after reading that the same causes COVID-19 is easier to do than adopting a new behavior like wearing masks.

d) **Confirmation bias:** We do not explore and interpret information in a neutral, objective manner, but rather have a tendency to search for or recall information that supports our prior beliefs, especially that conform to existing culture.[15] So, we are more likely to believe that medicinal plants of traditional use, rather than vaccines, are effective against COVID-19, even if there is little scientific evidence to support the claim.

e) **Social learning theory:** People develop new behaviors not only through their own experiences, but also by observing what the majority in a social network does.[16]

f) **Fear reasoning:** Humans dread unexplained territories. In the absence of fact-based answers, even unreasonable rumors become popular under conditions of uncertainty. People started self-medicating at the initial time of the pandemic when they didn't know what to do.

g) **Continued influence effect:** People often make use of misinformation that is "stuck" in their memory during later reasoning even if the piece of information is corrected.[17] For example, one will restrain from visiting the restaurant which was associated with food poisoning, even if the information was incorrect and even if the person accepts and remembers this correction.

Notwithstanding these theories, misinformation does not affect everyone in the same way. A web survey had collected data to understand the patterns of information consumption in India in 2018 and had found that the young (below 20 years), the old (above 50 years) and those who are new to internet or smartphones are more susceptible to believing in fake news.[18] A substantial percentage (45%) of people are not aware of the existence of fact checking organizations and people usually verify the information they receive when they are pushed to do so. A study conducted during COVID-19 pandemic including five countries showed that people who are hesitant in taking vaccines or do not abide by health guidance measures have a higher chance of believing misinformation.[19]

Strategies to counter fake news

The various strategies to counter fake news have to be tailored based on the pathogenesis at work. Some of the potent ways are as follows:

1. ***Quality journalism***

   Health communication is one of the most important methods to immunize the public against fake news, as it has a direct bearing on disease prevention, health promotion and quality of life.[20] A large quantity of health news appears daily in mass media. Journalists have the responsibility to inform and educate people, and act as mediators between the public and academia. We need to develop systems which fund local, independent and deeply researched journalism. Empowering journalists with toolkits, training workshops on evidence-based news, discouragement of sensationalist headlines and greater coherence in official announcements by policy makers can also help this to a great extent.

2. ***Power of Law***

   Article 19 of the Constitution guarantees freedom of speech to all Indians. Indian laws were decreed in the pre-internet era, and since there is no provision in which specifically deals with fake news, so appropriate existing civil, criminal, administrative, and other laws are applied. The government has the power to control fake news using the Sections 153A, 499, 505 and 505A of Indian Penal Code, and Section 54 of Disaster Management Act, 2005 by punishing persons who create panic among public or disturb social order.[21]

   Using the Intermediaries Guidelines Rules, 2011 of the IT Act, telecom/network service providers, search engines or online sites e.g., Google, Facebook can be instructed to disrupt the circulation of any false information by removing such content immediately and

promote dissemination of authentic information. Organizations like News Broadcasters Association, Broadcasting Content Complaint Council and The Press Council of India can have protocols in place for prompt identification and removal of inaccurate information on mass media.

Internationally, countries like China, Russia, Germany, Malaysia, and France are authorizing new laws specifically aimed at social media networks that disseminate fake news.[5]

3. ***Improving digital health literacy***

The public needs to be educated on how to identify fake news and encouraged to do a quick search regarding the credibility of the authors before disseminating any information. Since headlines tend to be written as click bait or to give sensationalist coverage, reading beyond them is important. Any affiliate links within the story should be checked for credibility. It is also important to pause and reflect on one's own biases and break the habit of emotive content impulsively. Checking dates is an important part of fact-checking as old stories that are irrelevant or out of context may get re-posted. Inculcation of a sense of social responsibility is also important so that people feel comfortable flagging or addressing fake information rather than simply ignoring the same. These may be done through webinars and social campaigns with live platforms to enable the public and clear their doubts regarding common misconceptions and false information.

4. ***Power of technology***

The lack of traditional gate-keepers is one reason why misinformation spreads farther and faster online than true information, often propelled by fake accounts or "bots". Use of CAPTCHA helps to an extend in preventing bots from sharing any news repeatedly. Unmet needs of the public may be tracked based on common search phrases and subsequently used to create responsive health messages. Liaising with public health platforms like 'Worldometer' can help in providing credible updates. Adding warning labels and flagging misinformation on social media may scale down the anticipated validity of the false information and readers' plan to share. Any cues or processes that redirect people to reliable information, or simply increase the effort required to share misinformation can also reduce its impact.

5. ***Pre-bunking Interventions***

Pre-bunking theory suggests 'inoculating' persons with small doses of misinformation so that they are pre-emptively made aware of their own cognitive biases and flawed arguments, and thereby make them more resistant to future misinformation. Such interventions, given in the form of psychological exercises or games, are expected to prevent misinformation from "sticking".[22]

6. ***Efficient fact checking organizations***

Multiple regional, national and international agencies have stepped up to debunk mis- and disinformation from unofficial sources circulating online and help in reducing the impact of fake news. Fact-checking workshops are also conducted for capacity building of various shareholders in identifying misinformation. Some pioneers in this area are Alt News, Boom, Youturn and Viswas, The Healthy Indian Project (THIP) and the Google initiative DataLEADS. Various chat-bots were introduced by WHO as well as governments to aid easy dissemination of credible information. This component in turn is intricately linked to digital literacy as the public need to have awareness and adequate access for these to function optimally.

7. ***Capacity building***

Organizations are required to establish modern digital information ecosystems that are responsive to the current needs. Training to spot fake news can be introduced in school curriculums. The utilization of an influential cartoon character in Sweden to teach young children about fake news may be looked at as a stellar example.[5] Promotion of interdisciplinary research to reduce the spread of fake news and address the underlying pathologies are also the need of the hour. At the time of an acute outbreak, carefully planned mental health crisis interventions and proper risk communication are invaluable cornerstones of an efficient system to tackle eminent panic. It is also important to redesign our information sources and cultivate an insight into the aspect of faith in the modern media ecosystems of the government.

CONCLUSION

Misinformation and disinformation have the ability to erode trust in public institutions and health systems at times when solidarity is the most critical. We need to cultivate a better understanding of this phenomena among the public as well as academia while promoting an appropriate balance of interventions, including assistance to autonomous journalism, fact-checking, augmentation of digital media literacy and renewed policy frameworks.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Cite this article : Tanveer R, Gayathri S, Yuvaraj K. Developing Counter Strategy for Information Warfare in Health Sector–Sifting 'Real' from 'Fake' News. Int J Med Public Health. 2022;12(2):46-9.