Clicks, likes, and shares: How Online Health Misinformation is Undermining Healthcare and Implications for Medical Professionals

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Introduction

Every year, in lecture halls and auditoriums across the country, thousands of medical students recite an oath that has guided physicians for centuries. Rooted in the teachings of ancient medicine, the Hippocratic oath is more than a tradition: it represents a commitment from physicians to uphold ethical standards, prioritize patient well-being, and protect the integrity of medical truth. For generations, these words have formed the foundation of trust between doctors and their patients.

Yet in today's rapidly evolving digital landscape, this trust faces unprecedented challenges. In an age where information is just a click away, patients are no longer turning solely to their doctors for medical advice: they are also relying on social media as a source to address their medical fears or questions. For example, a mother worried about her child's regular vaccinations can find comfort in a Facebook group of like-minded parents. A young teenager struggling with weight loss can stumble upon a wellness influencer's video, promising a "natural" cure her doctors won't tell her about. A patient, newly diagnosed with cancer, may hesitate at his doctor's recommendation, because an online forum swears there's a better way.

In these moments, trust quietly shifts, not out of recklessness, but from a patient's desire to feel seen and heard in a field full of complex medical jargon and rushed appointments. Social media platforms have turned into breeding grounds for medical myths, fueling vaccine hesitancy, distrust in treatments, and skepticism toward healthcare professionals (Chua and Banerjee 2017, Jolley and Douglas 2014, Lan et al. 2024, Lewandowsky et al. 2013, Wang et al. 2019). The rise of "expert patients", or individuals without formal medical training but with self-acquired knowledge, poses challenges for healthcare workers by blurring the boundaries between professional expertise and general health awareness (Seymour et al. 2015).

My analysis paper serves to represent the current discourse found in the literature on the topic of health misinformation and disinformation in today's modern digital age. This topic has skyrocketed in its research based on the evolution of social media across the past years, however research on the role of health professionals facing this problem is still evolving. As a result, my aim in this paper is to provide a comprehensive overview of the factors that contribute to misleading health information online and connect this to ways health professionals can actively address this issue. Specifically, my analysis will focus on how the spread of misinformation and disinformation in healthcare creates challenges for healthcare professionals by contributing to a broader issue that affects public trust in medical institutions. This issue can lead to misguided health behaviors and added pressure on physicians. To address this, healthcare professionals should not only correct misleading information but also work towards rebuilding trust through clear communication and the use of technology to improve access to reliable information.

My paper is structured into five parts. The introduction and background of the paper will discuss the what health misinformation and disinformation can look like. The third section of the paper will discuss how misleading health narratives spread (including the use of social media algorithms and factors such as denialism and conspiracy theories). The fourth section will discuss the consequences of health misinformation for health professionals and on the healthcare system. Lastly, the paper will conclude with possible solutions healthcare providers can take to help foster a more open-conversation in addressing misleading health narratives.

Background

Misinformation vs. Disinformation

In today's modern digital environment, social media offers multiple benefits for patients to share health information. Social media can provide emotional support to patients, update

patients on the latest information for treatments, and provide a sense of connection amongst others facing similar conditions. The option of anonymity on social media offers safe spaces for patients to feel comfortable sharing their personal health concerns more openly. However, these digital spaces also contain misleading health information.

The widespread dissemination of false medical claims can be categorized as either misinformation or disinformation. Misinformation refers to inaccurate or misleading medical claims that contradict established scientific evidence. It is often spread unintentionally by individuals who believe the information to be true, but it can still contribute to widespread misconceptions. On the other hand, disinformation involves the deliberate spread of false information with the intent to manipulate public perception or achieve personal financial, or political gain. Both health misinformation and disinformation present significant challenges for healthcare professionals, as they undermine public trust, create medical confusion, and divert patients from evidence-based medical decisions (Patrick et al. 2022).

Over the past couple of years, health-related misinformation and disinformation on online platforms have escalated to global scales. According to the 2025 World Economic Forum Report, both digital misinformation and disinformation are listed as the top-most global risk in the next 2 years that is capable of negatively impacting global GDP and population-wide resources. Over the span of the next 10 years, digital misinformation and disinformation ranks as the 5th highest global risk. The rise of artificial intelligence (AI) generated content that mimics human-generated material further complicates this issue by making it challenging to determine accurate digital information (Elsner et al. 2025).

According to the World Health Organization (WHO), this spread of health-related information online can contribute to the creation of infodemics, which is defined as “excess

information, including false or misleading information, that spreads in digital and physical environments during a public health emergency" (Wilhelm et al. 2023). This flood of unreliable information shapes risk behaviors, discourages individuals from seeking appropriate care, and weakens the effectiveness of health policies and interventions during emergency scenarios (Wilhelm et al. 2023).

A key example of an infodemic was seen in recent years during the COVID-19 pandemic. The spread of COVID-19 misinformation planted the seed for significant real-world consequences, such as severely disrupted healthcare systems and heightened public mistrust in medical institutions. The pandemic created an unprecedented wave of conflicting messages, conspiracy theories, and skepticism toward medical treatments and public health measures. While distrust in medicine is not new (similar patterns have emerged during the HIV/AIDS crisis), social media has accelerated and amplified misinformation at an unprecedented scale that makes addressing this issue more challenging in today's digital environment (Wilson et al. 2024).

Examples of Health-related Misinformation and Disinformation

In the literature, there are various health-related topics that have been found to contain misinformation and disinformation. These topics range from health-related treatments (vaccines, abortion, drug usage), health-related conditions (cancer, cardiovascular disease, psoriasis, bowel disease), and other health-related factors (smoking and water safety). One of the most well-studied topics in this literature is vaccine-related misinformation. Various forms of vaccines have been found to have misinformation, such as the COVID-19 vaccine, HPV (human papillomavirus) vaccine, MMR (measles, mumps, and rubella) vaccine, or the influenza vaccine.

Vaccine-related misinformation focuses on misleading claims about side effects, alleged links to autism, and distrust in government or pharmaceutical companies (Wang et al. 2019).

Vaccine-related disinformation also circulates in the context of these discussions. A famous example of this in the literature lies in the retracted 1998 study "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive development disorder in children" from the prestigious medical journal *The Lancet*. In this study, gastroenterologist Dr. Wakefield and his team falsely claimed a link between the MMR vaccine and neuropsychiatric diagnoses, such as autism, based on an analysis of 12 children. Since the publication of this controversial study, several epidemiological studies have debunked Dr. Wakefield's findings and found no evidence to support this claim. Upon further investigation, it was revealed that the original study forged data to receive financial gain from vaccine-producing companies. Even though many studies have disproved this claim, vaccination rates and acceptance of the MMR vaccine have declined since the publication of the 1998 study (Rao and Andrade 2011).

Another example of health disinformation can be found from the tobacco industry. The tobacco industry has been notorious for spreading disinformation in the form of "white coating", or funding the use of fake experts to present misleading claims about smoking, despite growing evidence of its harms (McKee and Diethelm 2010). This disinformation can skew the views of young adults towards smoking behaviors. Albarracin et al. (2018) analyzed the impact of misleading claims from YouTube videos about tobacco products (such as e-cigarettes, cigars, pipe tobacco, chewing tobacco, hookah) among young adults (18-24 olds). Viewers that watched pipe smoking and e-cigarette misinformation videos were revealed to have more positive attitudes (ranked on a Likert scale from 1 to 7) towards combustive cigarettes, e-cigarettes, and hookah smoking. Because attitudes toward smoking can serve as a predictor for future smoking

behaviors, misleading claims about smoking may shape young people's views on tobacco products and contribute to greater acceptance of e-cigarettes and hookah (Albarracin et al. 2018).

Misinformation is also prevalent when it comes to medical conditions. Leong et al. (2018) conducted a study analyzing 100 YouTube videos about Type 2 diabetes and found that 32% of videos contained misleading information about foods, diets, and natural supplements to reverse or cure diabetes. These misleading sources of information had more daily views compared to videos with reliable information from healthcare providers and professional organizations (Leong et al. 2018).

The vast breadth of misinformation across health-related topics indicates that misinformation in healthcare is fairly complex. This widespread nature of misinformation makes it challenging to pinpoint all the types of misinformation a social media user is affected by. For example, those who believe misinformation about vaccines may not be the same people who believe misinformation on cancer (Scherer and Pennycook 2020).

How Misleading Health Narratives Spread

The Role of Social Media Platforms

Social media platforms (such as Facebook, X, and Instagram) play a central role in spreading health misinformation and disinformation through their algorithms, which are programs designed to maximize user engagement by tracking users through likes, shares, clicks, and comments (Wang et al. 2019). Algorithms rely on 3 factors to spread misinformation: the sender of the message, the message itself, and an interpreter. Official agents for messages can be businesses, PR firms, news outlets, or political groups. Unofficial agents often involve

individuals with no official or institutional affiliations or bots, which are programs designed to mimic human interactions on social media (Wardle and Derakhshan 2017). Messages on social media can take several forms, and social media algorithms are trained to spread content that evokes a strong emotional response (such as fear or anger) or visual media designed to grab a user's attention (such as memes or videos). Because emotionally charged or controversial content is designed to attract more attention from users, the algorithm prioritizes the spread of sensationalized posts over fact-based information. As a result, false health information spreads significantly faster on social media than factual content, which makes real-time fact-checking an impossible task to maintain. This unregulated nature allows unverified health claims to gain traction before they can be corrected. Additionally, many top search results are promoted through paid advertising rather than being vetted for reliability, making it easier for

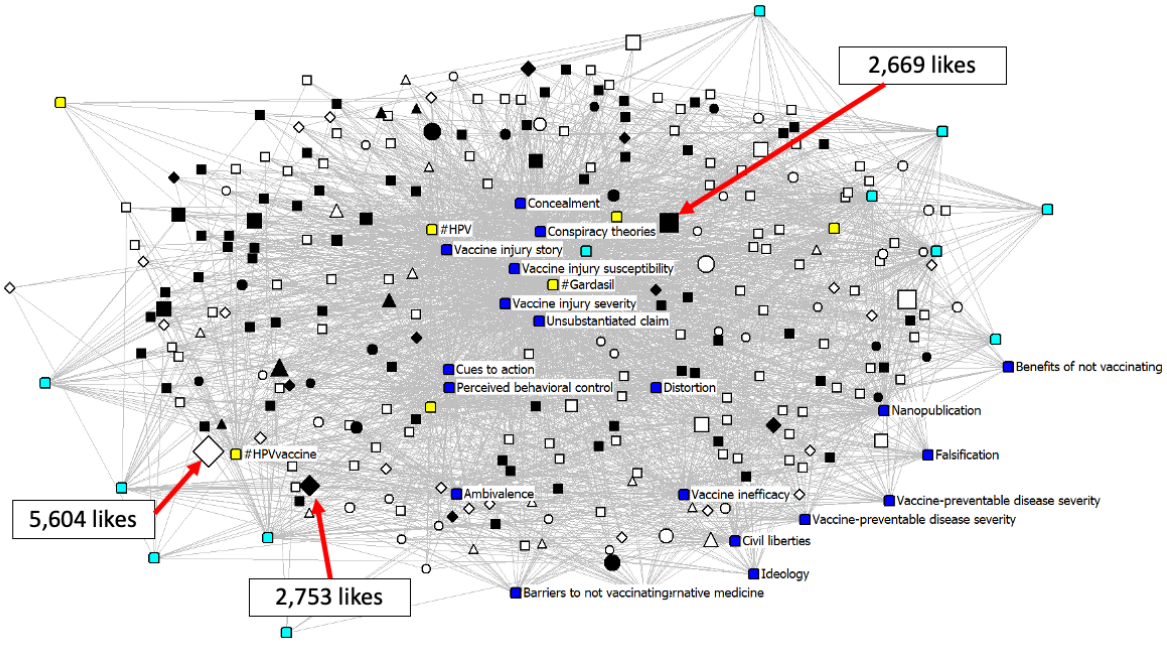

Figure 1: An example of an anti-HPV vaccine network from Instagram posts filtered for #HPV, #HPVVaccine, #Gardasil. Courtesy of "Dimensions of Misinformation About the HPV Vaccine on Instagram: Content and Network Analysis of Social Media Characteristics" (Massey et al. 2020).

disinformation to appear more trustworthy than evidence-based sources. These factors result in

the algorithm to prioritize misleading claims over evidence-based medical guidance (Wang et al. 2019).

Interpreters of social media content are responsible for actively processing the message they view in their social media feed. Sociologist Stuart Hall's reception theory explains the 3 positions interpreters can take to respond to a message: hegemonic/dominant (accepting a post's message as it is presented), negotiated (accepting parts of a post's message), and oppositional (declining the message altogether). At a micro-level, individuals who receive misinformation form judgement about the believability of the message, depending on information source, narrative, and context. The tendency for the message to spread depends on the degree to which an individual receives suspect such misinformation. At a macro-level, patterns of misinformation cascade and create networks with their own characteristics (Wardle and Derakhshan 2017).

Echo Chambers and Confirmation Bias

Selective exposure to misleading content driven by social media algorithms generates the formation of homogenous clusters of content known as echo chambers. These polarized communities arise due to confirmation bias, which is when individuals accept claims based on social norms and their existing belief systems, regardless of the claim's accuracy. Social homogeneity is a primary driver of confirmation bias, as it is common for users to interact with friends with the same profile reflecting their sentiments, which leads to the creation of echo chambers due to the proliferation of biased narratives formed from unsubstantiated rumors and paranoia (Vicario et al. 2016). Additionally, confirmation bias reinforces this tribal mentality - even when users follow a diverse range of accounts, social media algorithms suppress opposing viewpoints, resulting in user's feed to not reflect this perceived diversity. In addition to user

interactions, bots fuel the creation of echo chambers by creating an illusion of multiple individuals supporting a message, which results in content to be more distorted or popular than it actually is. This creates the idea of tribe mentality: even if a user has a politically diverse circle of friends or followers, algorithms on social media platforms suppress views opposing those of the user, so what they see in their feed does not necessarily reflect that diversity (Wardle and Derakhshan 2017).

Milhazes-Cunha and Oliveira (2023) investigated this phenomenon by analyzing interactions on the Portuguese Facebook page “Doctors for the Truth” and found that Facebook's algorithm helped promote an echo chamber of medical misinformation. Users within this group prioritized discussions questioning the reliability of PCR testing, the necessity of mask use, and the credibility of mainstream media. This research highlights a core trend seen across misinformation in social media: selective reinforcement from these social media platforms discourages critical thinking, as group members consistently validate misleading claims while rejecting outside information. Furthermore, emotional reasoning, particularly fear and distrust of institutions, can make participants more susceptible to falsehoods, limiting the effectiveness of traditional fact-checking. This research highlights a core trend in online misinformation: selective reinforcement discourages critical thinking, while emotional reasoning - particularly fear and distrust of institutions - makes individuals more susceptible to falsehoods (Milhazes-Cunha and Oliveira 2023).

Denialism and Conspiracy Theories

Algorithm-driven echo chambers not only facilitate the rapid dissemination of misleading health claims but at a larger-scale can contribute to the denialism of science. This phenomenon involves the use of rhetorical arguments to create the illusion of unresolved debates surrounding

general scientific consensus. Skepticism in science is an essential part of critical thinking and the scientific process; however, denialism differs from healthy skepticism as denialists are persistent in holding their views regardless of new evidence. This type of mindset creates skepticism and distrust against the scientific method and holds various characteristics, such as the use of doubt and logical fallacies to counter any scientific agreement, the use of selective citations or "cherry-picked" data to support misleading claims, and the use of conspiracy theories (McKee and Diethelm 2010).

Much like denialism, conspiracy thinking has been found to reflect cognitive thinking patterns instead of being linked to personality traits. Conspiracy theories can play in shaping public attitudes toward scientific consensus and healthcare practices. Examples of conspiracy theories in health-related topics include the false claim that vaccines cause autism or the idea that second-hand tobacco smoke contributing to poor health outcomes is a fabricated myth created by scientists for financial gain. These beliefs can contribute to skepticism toward mainstream recommendations, influencing individuals' willingness to seek medical care and adhere to public health guidelines. Research suggests that conspiracy beliefs are not merely the result of a lack of knowledge but reflect a distinct cognitive style, characterized by skepticism toward official explanations and a tendency to attribute events to hidden, powerful forces. This makes it challenging to counter conspiracy thinking beliefs by simply providing accurate information to counter false information. For example, if experts

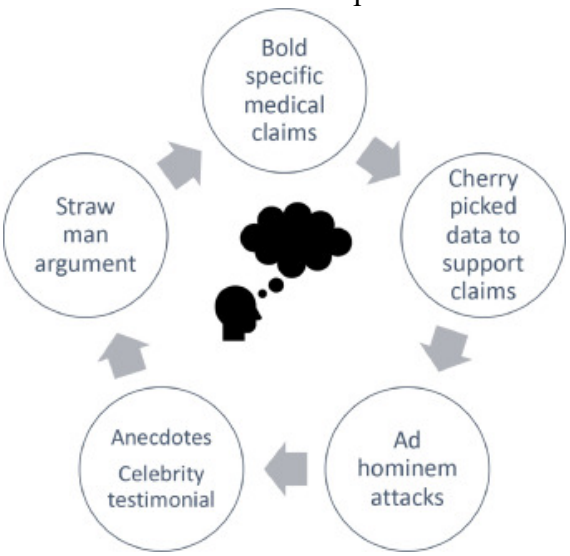

Figure 2: Factors Contributing to the Spread of Online Misinformation. Courtesy of "Social media and its impact on health care" (Patrick et al. 2022).

disprove a conspiracy theory, a conspiracy thinker might argue that the evidence against the theory is actually part of the conspiracy - an attempt by "the conspirators" to cover up the truth. This perspective suggests that as evidence contradicting a conspiracy grows stronger, believers interpret this evidence as further proof that those in power are actively trying to suppress the “truth”. This highlights a major challenge in countering conspiracy theories with factual information: presenting more scientific evidence can sometimes strengthen the rejection of truth, leading to greater acceptance of the conspiracy theory (Lewandowsky et al. 2013).

Research has shown that exposure to health-related conspiracy theories weakens trust in healthcare institutions, leading to lower adherence to medical advice and decreased likelihood of seeking necessary treatment (Natoli and Marques 2020). A study performed by Jolley and Douglas (2014) found that participants exposed to an antidepressant conspiracy theory exhibited reduced trust in the health industry, which in turn decreased their intentions to seek vaccinations. This aligns with broader findings amongst public health that conspiracy theories, whether about vaccines, mental health treatments, or general medical care, create a sense of powerlessness and skepticism toward medical professionals (Jolley and Douglas 2014).

The COVID-19 pandemic provided a striking example of how this effect contributed to the decline of patient health and resistance to public health measures. Neely et al. (2021) analyzed vaccine hesitancy beliefs among 600 Florida residents and found that misinformation exposure strongly correlated with lower vaccination rates. While 73.8% of individuals that had not encountered misinformation were vaccinated, this number dropped to just 52.2% among individuals exposed to six or more misinformation themes (such as COVID-19 vaccines cause infertility or are mandated by the CDC). These patterns highlight a key issue in misleading health-related narratives: by diminishing trust in medical professionals, this discourages

individuals from engaging with healthcare systems altogether and can negatively impact health outcomes (Neely et al. 2021).

Factors Making People Susceptible to Misleading Health Narratives

Misinformation on its own can start off as something innocuous and its widespread nature on social media can make it challenging to characterize a user's propensity for believing false health narratives. Several approaches to analyzing this have emerged in the literature. One way to analyze this issue is using the deficit hypothesis, which proposes that the lack of knowledge or digital literacy makes users susceptible to misinformation. Under this perspective, users that do not have sufficient knowledge to discriminate between true or false information are more prone to believing misinformation (Scherer and Pennycook 2020). This is supported through a study conducted by Krishna (2017) assessing the knowledge of vaccines and vaccine negativity found in 465 adults (18-71 years). Individuals with a lack of knowledge about vaccines and stronger negative beliefs towards vaccines were found to have higher levels of communication behaviors about vaccines than those who are not. This higher level of activism may explain why the diffusion of these misleading health narratives in social media platforms may contribute to misinformation (Krishna 2017).

Cognitive declines and lower digital literacy in older adults are factors that can also drive susceptibility to misinformation (Scherer and Pennycook 2020). To address this issue, Guess et al. (2020) conducted a digital media intervention with users and found that providing simple decision rules for distinguishing between mainstream and false news was effective in allowing users to identify fake news headlines over real ones. Their results support the idea that a lack of knowledge can be targeted through digital media interventions to reduce susceptibility to misinformation (Guess et al. 2020).

User's pre-existing worldviews can also shape their ability to be influenced by misinformation. The seminal rumor theory explains that personal involvement creates a cycle that fuels the spread of rumors in an online setting. According to the theory, a user's decision to spread a rumor can reinforce the spread of rumors that are repeatedly circulated. This reinforcement creates a sense of perceived credibility for these rumors that further fuels their spread across more social networks (Wang et al. 2019).

An alternative viewpoint to the spread of misinformation is that users lack the ability to reflect about the truth or accuracy of news content that is encountered on social media. Users can may be more vulnerable to misinformation due to the spread of emotional content and attention-grabbing media (such as memes or videos) that can contribute to a lack of awareness of misleading narratives (Scherer and Pennycook 2020). The ease of spreading content on social media results in a lack of critical thinking, which can make users more susceptible to believing misinformation. Chua and Banerjee (2017) illustrated this in their study in which they exposed participants to health rumors and measured their agreement with the rumor and probability to share these rumors. It was found that users that were characterized to be epistemologically naïve (limited awareness of how information is accessed) were found to have a higher propensity to share online health rumors compared to participants that were epistemologically robust (more awareness of how information is accessed) (Chua and Banerjee 2017).

Additionally, fear-based messaging has been shown to be effective in contributing to the spread of misinformation. When people are more frightened, they become more susceptible to misinformation, which makes these misleading accounts effectively reach mainstream audiences through the design of social media algorithms. This creates a negative feedback loop with the spread of these narratives reinforcing confirmation bias as users interact with their feeds. Over

time, these biased narratives (often fueled by unsubstantiated rumors, mistrust, and paranoia) proliferate within these groups and making it harder to introduce accurate information against these dominant viewpoints (Wang et al. 2019).

Navigating Health Misinformation: Challenges in Healthcare

Implications for Healthcare Professionals

Health misinformation also places a significant burden on healthcare providers, contributing to physician burnout and moral distress. A study by Sinsky et al. (2023) on 3,417 physicians found that during the COVID-19 pandemic, 91.8% of surveyed physicians experienced stress related to the challenges of providing care in a highly uncertain environment, with nearly 72.1% of physicians reporting symptoms of burnout. Many physicians described moral distress stemming from compromised professional integrity, exhaustion from treating COVID-19 patients, and the emotional toll of navigating discussions with misinformed patients as factors contributing to this stress. Furthermore, 56.2% surveyed physicians reported feeling less empathy and greater frustration or resentment toward unvaccinated patients, highlighting how misinformation-induced conflicts can negatively impact provider well-being (Sinsky et al. 2023).

Implications on the Healthcare System

Beyond its impact on individual physicians, misinformation also undermines public trust in the entire healthcare system. Misinformation does more than just mislead individuals: it gradually erodes trust in scientific research and the healthcare system as a whole. Repeated exposure to misleading claims can cultivate skepticism toward even the most well-supported medical consensus, making people more likely to dismiss credible health recommendations

(Patrick et al. 2022). This distrust is often fueled by narratives that depict scientific institutions as withholding information or acting in secrecy. For example, sensational claims that advertise a "hidden cure" or suggest that medical professionals are suppressing certain treatments may not immediately persuade someone, but over time, they reinforce the idea that anecdotal wisdom holds as much weight as rigorously tested scientific evidence. In some cases, misinformation is deliberately spread to sow distrust in public health institutions, contributing to widespread uncertainty and resistance to medical guidance. This breakdown in confidence not only affects individual decision-making but also weakens the effectiveness of public health initiatives, creating significant challenges for healthcare providers and policymakers alike (Southwell et al. 2019).

Charting the Future: Strengthening Trust in Healthcare Communication

Solutions for Healthcare Professionals

Addressing the systemic crisis caused by medical misinformation requires more than just correcting false claims - it demands a proactive effort to rebuild public trust in healthcare institutions. This issue is particularly concerning as research highlights that poor health communication disproportionately impacts patient populations from lower SES backgrounds and exacerbates existing health disparities (Pampel et al. 2010). The use of health communication in a positive manner to address medical problems and lessen these disparities can serve as one effective approach. By leveraging diverse healthcare professionals and trusted community figures to bridge the gap between medical expertise and public understanding. Research has shown that patients are more receptive to medical guidance from individuals who share their

background, whether that be healthcare providers or trusted community educators (Wilson et al. 2024).

Utilizing physicians, clinic staff, or community leaders to deliver accurate health information can serve as a powerful countermeasure to misinformation and rebuild trust, particularly in communities where medical mistrust has been historically exploited. Furthermore, healthcare professionals from diverse backgrounds must remain open to diverse patient perspectives, acknowledging that factors such as religious beliefs, family experiences, and previous negative medical encounters shape patients' engagement with health information (Wilson et al. 2024). Furthermore, medical anxiety can contribute to a patient's reliance on health misinformation, which can negatively influence a patient's beliefs about treatment options (Lan et al. 2024).

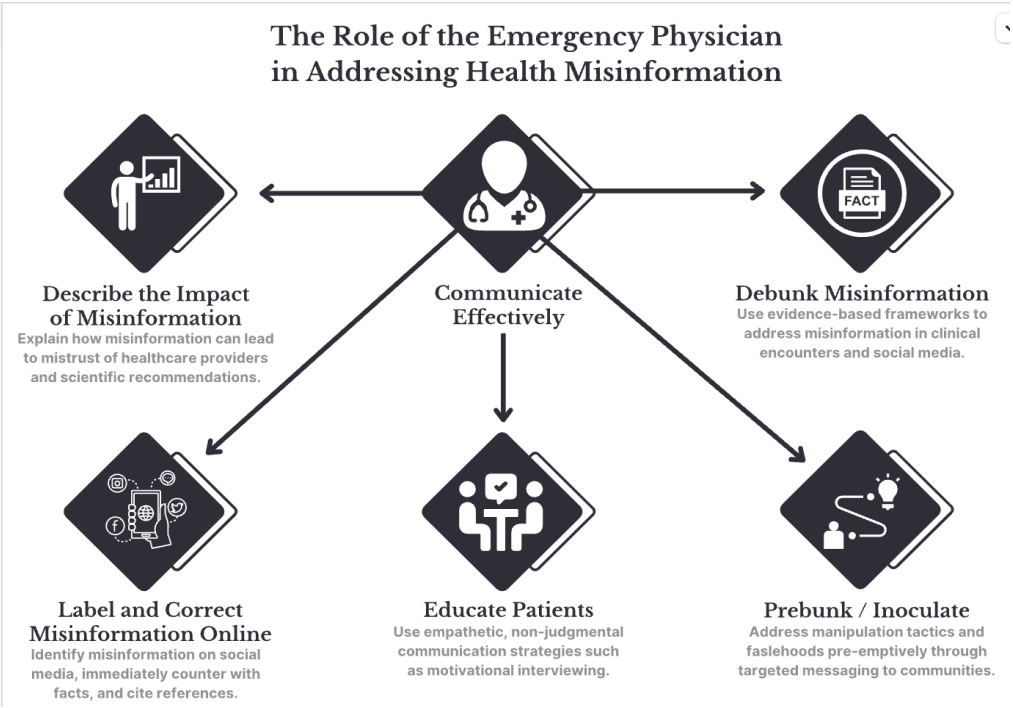

Figure 3: Ways physicians can be trained to address health misinformation. Courtesy of "The role of emergency physicians in the fight against health misinformation: Implications for resident training" (Sheng et al. 2022).

Healthcare providers must recognize that patients will persist in seeking medical advice from the internet or social networks and attempting to discourage this behavior is likely to be ineffective. Instead, providers must play a key role in supplementing this information with evidence-based resources. While patients have the right to choose the information they trust, healthcare providers should act as trusted intermediaries to guide patients to reliable resources to prevent them from being swayed by a single, potentially misleading narrative. Providers can offer themselves as a resource for patients to ask questions and explore information, rather than imposing knowledge in a way that feels dismissive or authoritarian. Using this approach, patients feel more empowered to make informed decisions. This method fosters more open communication and can help providers meet patients where they are when discussing medical treatment options (Southwell et al. 2020).

Hedge your claims	"Sometimes" "Often"	Soften assertions Acknowledges uncertainty Shows humility
Emphasize agreement	"We both want what's best for your child"	Improves the tone of the conversation
Acknowledge other perspectives	"I understand that finding a natural remedy is important to you"	Demonstrates active listening
Reframe your ideas in positive terms	"Your daughter will feel much safer having your grandson around you after you are vaccinated against COVID-19"	Establishes constructive tone Increases likelihood that the other person will reciprocate

Figure 4: The HEAR mnemonic provides physicians a guide on having conversations with patients about misinformation. Courtesy of "The role of emergency physicians in the fight against health misinformation: Implications for resident training" (Sheng et al. 2022).

Systemic-level solutions

In order for providers to address health misinformation, healthcare professionals must also receive proper training to understand how to create open-conversation discussions with patients about health misinformation. While some experts and government officials have developed strategies to assist clinicians in managing health misinformation, research indicates

that additional training is necessary. Herrmann-Werner et al. (2019) found that medical students can be better equipped to engage with patients who obtain health information from online sources (e-patients) through application-based training. This approach, which involved simulated patient-physician interactions and interactive discussions, helped students develop communication strategies for addressing health information sourced from the internet (Herrmann-Werner et al. 2019). However, despite these efforts, few healthcare providers receive formal training in addressing health misinformation during their academic or internship programs (Lan et al. 2024). This underscores the need for continued professional development to ensure that healthcare providers have the skills to effectively counter misinformation in clinical practice.

Another promising solution lies in the use of artificial intelligence (AI) to detect and counter misinformation more effectively than current methods. While social media algorithms driven by AI often amplify misinformation, AI offers itself as a powerful tool to combat this information. As a solution, Burke-Garcia and Hicks (2024) have introduced the concept of Health Communication AI, an approach that integrates the authenticity and relatability of evidence-based medicine with the scalability and precision of AI-driven health messaging. This model envisions AI systems that are trained with accurate medical information from health professionals in order to identify and correct misinformation in real-time through providing tailored, empathetic, and evidence-based responses on highly misinformed topics such as vaccination, alternative medicine, and health related-issues, like HIV or smoking diseases. However, for this approach to succeed, it must address biases in AI models and requires investment in both AI development technologies and training for healthcare professionals to work effectively with these tools (Burke-Garcia and Hicks 2024).

Alongside this approach, healthcare institutions can develop a clear plan and set of standards to address the spread of false medical claims. While scientific debate is necessary in the face of uncertain evidence, healthcare institutions can establish guidelines to ensure that medical professionals are held accountable for spreading inaccurate information, with appropriate measures in place, such as credential reviews or licensure evaluations (Wilson et al. 2024). Regulatory bodies should be equipped to balance the protection of free speech with the responsibility to uphold evidence-based practices. Strengthening these standards will help preserve public trust in healthcare and support the integrity of medical practice.

Conclusions

The field of medicine is constantly evolving to adapt to new discoveries and technologies. In today's modern healthcare setting, patients are eager to learn more about their healthcare options, but the loudest voices on social media may not be the most helpful in providing patients with the knowledge they are seeking. The rise of health-related misinformation and disinformation present a growing challenge for both patients and healthcare professionals. As social media facilitates the rapid spread of information, including misleading narratives, there is an increasing need for patients to have access to accurate, science-based information to help them navigate this vast amount of content online. Healthcare professionals can play a key role in this issue by guiding patients toward reliable resources and fostering informed decision-making, which is critical in maintaining public confidence in healthcare and supporting overall well-being.

Additionally, strengthening the connection between scientific advancements and public understanding will be essential in addressing misinformation. By leveraging technology, upholding principles of trust and transparency, and promoting diverse perspectives, the

healthcare community can help support a more informed public while remaining adaptable to evolving challenges. By strengthening the relationship between healthcare professionals and the public, and addressing the root causes of susceptibility to misinformation, medicine can continue to serve as a force for improving health and well-being.

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