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The Role of Indonesian Doctors as Content Creators in Fighting Health Hoaxes, Myths, and Stigma on Social Media

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Abstract

Amidst the proliferation of disinformation and misinformation related to health on social media, the public must ensure that the sources of information are trustworthy. This research aims to explain the role of doctors in the fight against health hoaxes, myths, and stigma spread through social media. The study adopts qualitative research with a phenomenological approach to understand doctors' experiences and perceptions regarding their efforts to address health hoaxes, myths, and stigma on social media. Fifteen doctors as content creators in Jakarta and Bandung were selected as informants using purposive sampling. The data was collected through interviews, observation participation, and documentation studies. The study showed that doctors (1) have a significant role in the fight against health hoaxes, myths, and stigma on social media, consisting of doctors as sources of accurate information, educators, and public health advocacy; (2) use any feature tools on social media such as making Q&A, stitch some content hoaxes, myths, and stigma, and collaboration with another expert, government, agencies, or health organizations ; (3) provide accurate information based on the educational process and scientific evidence.

Keywords

Doctors, Health hoaxes, Health myths, Social media, Phenomenological study

Introduction

Healthcare professionals play a role in countering misinformation on social media. They leverage these platforms to disseminate research papers, promote scientific viewpoints, and circulate information about professional opportunities (Gatewood et al., 2020, p.489). Specifically, doctors and nurses have the potential to correct health misinformation on social media due to the clinical expertise, which they can impart to

the public (Bautista et al., 2021, p.2).

Social media is a space where people share information and engage in discussions. However, it is essential to be aware that rumors based on anecdotal evidence can sometimes arise, leading to misunderstandings. While social media is acknowledged as a platform for sharing health-related knowledge, health professionals and researchers also recognize the risk of misinformation spreading on these platforms and the need to help control it (Suarez-Lledo & Alvarez-Galvez, 2021).

The spread of false information can have serious repercussions, especially during public health crises. The COVID-19 pandemic has demonstrated the harmful impact of misinformation on public health, leading to confusion, fear, and non-compliance with evidence-based recommendations (Islam et al., 2020, p.1621). During such crises, doctors have a crucial responsibility in communicating with the public. As trusted and credible figures in healthcare, doctors play an essential role in sharing accurate information (Pramana et al., 2021).

Notably, from 2018 to 2023, health-related hoaxes in Indonesia were the most prevalent, with 2,256 reported cases, followed by government-related hoaxes (2,075 cases), fraud (1,823 cases), and political hoaxes (1265 cases) (Kementerian Komunikasi dan Informatika, 2022). During the COVID-19 pandemic, there was a rise in the dissemination of false information on social media and online platforms (Birdieni, 2021). Four types of disinformation were prevalent during the pandemic: misleading content, manipulated content, false content, and fabricated content. For example, various actions or certain substances were falsely claimed to cure or prevent COVID-19, such as alcohol, bananas, drinking water, marijuana, onions, Dettol, putting Amoxicillin in water tanks, soaking in seawater, taking vitamin C, eating alkaline foods, consuming lemons, and even smoking (Bafadhhal & Santoso, 2020, p.245). However, the challenge lies in the immediate need for communication and the overload of information during a crisis, making the spread of misinformation unavoidable (van der Meer & Jin, 2020, p.561).

Numerous doctors in Indonesia have turned to social media to combat the spread of false information. Dr. Tirta Mandira Hudhi (@dr.tirta) emerged as a prominent figure during the COVID-19 pandemic, with his Instagram followers growing to 2.4 million. His content, which often addresses COVID-19 issues, has been highly controversial and viral. Hudhi remains steadfast in confronting misinformation about COVID-19 that is shared throughout the community, including on social media platforms (Fauziah, 2021).

In recent years, numerous studies have explored the dissemination of hoaxes on social media and how doctors use social media. For example, many medical professionals in the UK have used social media to voice their views and concerns about the COVID-19 pandemic, sharing their opinions, frustrations, and disbelief (Law et al., 2021, p.2). In Indonesia, the COVID-19 pandemic led to a surge in disinformation, causing widespread fear and anxiety. Implementing digital and media literacy training in the national education system could effectively address this urgent issue (Rahmawati et al., 2021, p.22). Hoaxes during pandemic included claims that the coronavirus does not exist, COVID-19 is no more dangerous than influenza, PCR test cannot detect the virus, wearing masks can cause CO₂ poisoning, and consuming alcohol can cure COVID-19. Other false claims included that the Sinovac vaccine contains a live, weakened virus and African green monkeys (Balatif, 2021, pp. 159-162). Senior doctor Zubairi Djoerban (@profesorzubairi), who served as Chair of the Indonesian Doctor Association (IDI) COVID-19 task force, also used social media to educate the public rapidly, emphasizing the need for an agile approach to combat disinformation (Djoerban, interview, 27 July 2023).

Several studies have examined the impact of misinformation on social media and

its consequences. For instance, Li et al. (2019) conducted an empirical study on adopting health information from social media and found that the narrative paradigm perspective influences users' decision-making processes. They emphasized the importance of understanding how users adopt health information from social media and the potential consequences of misinformation. The study reveals that a narrative approach to communication, centered on storytelling rather than logical scientific reasoning, can help tailor health messages more effectively to the audience.

Pulido et al. (2020, p.4–5) focused on the social impact of health misinformation shared on social media. They aimed to identify false health information and its social impacts on these platforms. Their study highlights the importance of addressing misinformation and promoting accurate health information dissemination on social media. The research findings offer guidance on using evidence-based strategies to combat fake news through public health initiatives. Among other recommendations, public health professionals should limit the spread of fake health news by targeting specific dissemination strategies. Additionally, interventions should be designed for discussion forums where health information is discussed, not just shared, to provide evidence of social impact.

Murić et al. (2021) examined the role of social media in amplifying antivaccination misinformation during the COVID-19 pandemic. They found that social media can amplify the effects of misinformation, leading to vaccine hesitancy and reduced compliance with health guidance measures. This emphasizes the need for effective strategies to counteract misinformation on social media platforms. Niu et al. (2020) investigated the influence of different sources and comments on mental health information processing on social media. They found that the credibility of health information is directly influenced by the source type, affecting attitudes and behavioral intentions.

Overall, these studies demonstrate the significant impact of uncertain health information on social media. The spread of misinformation can lead to misperceptions, vaccine hesitancy, and reduced compliance with health guidance measures. It is crucial to address this issue by promoting accurate health information dissemination, verifying the credibility of sources, and implementing strategies to counteract misinformation on social media platforms.

In Indonesia, health hoaxes are not only limited to the COVID-19 pandemic; various other hoaxes are also being spread on social media and digital platforms. Some prevalent health hoaxes include drugs claiming to cure diseases without strong scientific evidence, vaccination myths unsupported by research, and false information about foods and drinks purported to have excessive health benefits (Suminar & Hadisiwi, 2021). The impact of health hoaxes in Indonesia can be harmful, as they can influence an individual's decision to seek medical treatment, cause delays in appropriate treatment, or even put their life at risk (Dharmastuti et al., 2021). The dissemination of uncertain health information on social media is a multifaceted issue with significant implications for public health. Social media platforms have become popular sources of health information, but the spread of misinformation and uncertainty on these platforms can negatively affect individuals' health behaviors and decision-making processes.

The rise of disinformation and misinformation on social media poses a significant challenge, particularly in public health emergencies. Doctors are crucial in countering misinformation by providing accurate information and debunking false claims. While efforts have been made to develop interventions to counter health-related misinformation on social media, the immediate need for communication during a crisis can make the spread of misinformation unavoidable. Understanding the characteristics of misinformation on social media is essential for designing targeted

strategies to mitigate its adverse impact.

As of January 2024, Indonesia had 139 million users, representing 49.9% of the total population (Kemp, 2024). Social media is a significant source of health information, as indicated by the large number of parents (89%) turning to online health information when their children are sick. While 31% trust their pediatricians more than unverified online sources, the majority of parents (91%) expressed a desire for help from health professionals through online media (Yudianto et al., 2023). Healthcare providers are also considering using social media for patient care as part of ongoing efforts to improve health outcomes (Ghalavand et al., 2020).

Although many studies have described the impact of social media in improving public health literacy, there is still limited research on how doctors use social media from the perspective of doctors as the main actors. This study aims to understand how content-creator doctors use social media by exploring the motivations behind their actions. The findings are expected to contribute to developing more effective guidelines and strategies for doctors using social media, especially Instagram, to combat health misinformation and disinformation.

Health Communication

Health communication is a relatively young and interdisciplinary field within applied communication studies. It extends beyond the interaction between healthcare providers (such as doctors, nurses, other health workers) and patients, encompassing the dissemination of health information, health promotion, and the development of communication strategies by government policymakers to influence public health behaviors.

Kreps (2009, as cited in Littlejohn & Foss, 2009) states that health communication is a vast and complex field of study, drawing from research and theories in other communication fields, including intrapersonal communication, interpersonal communication, group communication, organizational communication, media studies, public relations, intercultural communication, rhetorical studies, and new information technology.

According to Mulyana et al. (2018) one way to improve professional medical services for the community is by enhancing communication skills and understanding sociocultural factors. A doctor's ability to communicate is crucial; a credible doctor not only possesses adequate medical knowledge but also excels in communication skills.

Applying effective health communication strategies and skills is critical to addressing global challenges in the health sector, including combating health misinformation and disinformation. Health hoaxes and myths are often tied to cultural beliefs, making it essential to consider the cultural context in health communication. Effective health messages must be adapted to the target community's values, beliefs, and cultural norms to increase the relevance, acceptance, and sustainability of health interventions in diverse communities (Littlejohn & Foss, 2009).

In the digital age, social media has become an essential source of information for many people. However, this rise in digital communication has introduced new challenges regarding the reliability and validity of health information disseminated on social media. The disruption caused by uncertain health information on social media is significant, as it can influence individuals' perceptions and actions concerning their health.

In a broad sense, misinformation can assume some meanings. Santos-d'Amorim & Fernandes de Oliveira Miranda (2021) highlights three related concepts: misinformation, disinformation, and malformation. Misinformation refers to false information disseminated without any intention to mislead, while disinformation is

false information deliberately spread to mislead (Lewandowsky et al., 2017).

Hoaxes are a form of disinformation, intentionally used to spread false information. Conversely, misinformation encompasses a broader range of incorrect information, including hoaxes, and is often characterized by the intent to deceive, mislead, or confuse. As hoaxes fall under the category of disinformation, they are frequently used to propagate false information, leading to a complex interconnection between the two. A hoax is an intentional fabrication or falsification that can appear in mainstream or social media, including rumors, fake graphics or tables, false claims of authorship, and dramatic images (Rodríguez-Ferrández et al., 2021).

Understanding Hoaxes, Myths, and Stigma

Although hoaxes and disinformation are often mistakenly considered interchangeable, they have distinct meanings. A hoax is typically associated with both disinformation and misinformation, (Yuliani et al., 2019). Disinformation involves the deliberate spread of false information, while misinformation refers to inaccurate information shared across social media networks. According to several experts, hoaxes have thrived in the era known as post-truth, a context where objective facts are less influential in shaping public opinion than appeals to emotion and personal belief. In this era, hoaxes are a significant component, distorting lies and truths where facts are no longer the primary resource, and emotions play a significant role in conveying the message. The term “post-truth” is often interchangeable with “post-fact”, where word selection, content manipulation, and information distortion convey half-lies or half-truths (Bayu et al., 2020).

In addition to hoaxes, myths pose a significant problem of misinformation in Indonesia. While there is no consensus on whether myths constitute disinformation or misinformation, myths are often connected to ancient and unsubstantiated beliefs still widely accepted by people. According to Strauss (1997, as cited in Sartini, 2014), myths are linked to the healing methods performed by "shamans", involving rituals and mythological elements. Strauss compared these methods to psychoanalytic psychotherapy methods and applied his structural sociological analysis to religion and magic in indigenous cultures, particularly focusing on the healing practices and ceremonies carried out by shamans. Strauss aimed to clarify why certain magical ritual practices are effective. The success of these practices is not solely dependent on the supernatural action or object but on the patient's belief in the magic.

There is a distinction between hoaxes, myths, and stigma. While stigma is not related to disinformation, it can result from misinformation. It is crucial to remember the message shared by WHO Director-General Dr. Tedros Adhanom Ghebreyesus shared via Twitter in February 2020, emphasizing that the greatest enemy then was fear, rumor, and stigma, not the coronavirus itself. As the world continues to fight COVID-19 and its new variants of the virus emerge, addressing COVID-19-related stigma remains urgent. Countries need to develop and implement effective plans of action to tackle this issue (Warren et al., 2023). Beyond COVID-19, health stigma is common in other areas, such as HIV/AIDS, mental health disorders, and obesity, where individuals often face stigma and discrimination due to societal misconceptions and stereotypes (Relf et al., 2021; Mane et al.; Sánchez-Carracedo, 2022).

Erving Goffman, a prominent sociologist, introduced the concept of stigma in his seminal work "Stigma: Notes on the Management of Spoiled Identity" (1963). Goffman defines stigma as an attribute that is deeply discrediting, causing an individual to be seen as less desirable or tainted within a particular social context. This concept has been widely influential in sociology and psychology, shaping our understanding of how individuals are perceived and treated based on their differences.

Goffman identifies three types of stigma: (1) abominations of the body, (2) blemishes

of individual character, and (3) tribal stigmas related to race, nation, and religion. Abominations of the body refer to physical deformities or disabilities, blemishes of individual character include traits like criminality or addiction; and tribal stigmas pertain to attributes associated with one's social group or identity. Goffman's framework provides a comprehensive understanding of the diverse ways stigma can manifest and its impact on individuals. Stigma is persistent and can transfer to individuals and organizations associated with those who are stigmatized (Phung et al., 2021).

Doctors as Professionals with High Credibility

The credibility of information on social media is critical. Effective communication relies on how credible the communicator is perceived to be. Doctors who share health information, education, and promotion on social media reflect the healthcare industry's adaptation to the digital era and how they build public trust in their profession. The credibility and presence of influencers, including healthcare professionals, on these social media platforms significantly impact on influencing consumer behavior and shape perceptions (Roy & Mehendale, 2021).

Generally, information from credible sources tends to be more convincing and leads to stronger beliefs. This principle also applies to misinformation (Lewandowsky et al., 2020). When correcting misinformation, the credibility of the source is crucial. Breaking down credibility into trustworthiness and expertise, the source's trustworthiness may have a more significant impact on whether people accept a debunking rather than their perceived expertise (Ecker & Antonio, 2021). It is advantageous to consider sources with substantial trustworthiness in multiple areas.

Regarding ethics, the use of social media by doctors in Indonesia is regulated by the Decree of the Honorary Council for Medical Ethics concerning Doctors' Ethics in Social Media Activities. Utilizing social media to combat hoaxes and misinformation about health and medicine is commendable as long as it aligns with scientific accuracy, moral values, professional standards, and legal requirements. However, healthcare practitioners should be mindful of the risk of engaging in heated debates with the public. If doctors choose to engage in arguments on social media, they must exercise restraint, refrain from using malicious language, and uphold the honorable reputation of the medical field (MKEK, 2021).

Research Methods

Researchers aim to explain and describe the current use of social media by doctors to fight against hoaxes, myths, and stigma. Researchers use qualitative research methods, which emphasize processes and meaning that cannot be quantified, measured, or analyzed, in terms of intensity or frequency, as is typical in quantitative research. According to Denzin & Lincoln (2009) qualitative research highlights the socially constructed nature of reality, the close relationship between researchers and research subjects, and the situational pressures of situations that shape research. Thus, this method is used to explore answers based on social experience and the construction of meaning.

Mulyana et al. (2018) assert that reality is a social construction, making the truth of reality relative and dependent on specific context deemed relevant by social actors (ontological). Furthermore, understanding a reality or research findings is shaped by the interaction between the researcher and the subjects being studied (epistemological). For the axiological standpoint, the researcher acts as a facilitator.

In the context of qualitative research, phenomenology is developed to explore individual experiences and how individuals understand and interpret the experience. Phenomenology focuses on the knowledge that emerges in consciousness – a science

that describes what people perceive, feel, and know in their awareness and experience at that time (Moustakas, 1994). In this study, the phenomenological paradigm was used to explain and describe how the reality of social media, as employed by doctors today to combat hoaxes, myths, and stigma, can be understood based on experience.

Data collection process was conducted through interviews and observations with informants. Conducting in-depth interviews and observation can be challenging, requiring both formal and informal approaches to key informants. In this study, the researcher initially contacted doctors through Direct Message (DM) on Instagram and WhatsApp, as well as through interactions at seminars and other events. After gaining access to several key informants, the researcher worked to build rapport with the doctors, maintaining good communication throughout. Direct interviews were conducted with 15 informants.

The observation technique used was participant observation, which required the researcher's active involvement. The researcher immersed themselves in the subject's daily activities, carefully observing their actions, listening attentively to their conversations, and engaging with those around them for an extended period. In this example, the researcher actively participated in the subject's social media experience on Instagram, actively following, listening to, and responding to health-related content and interactions shared by doctors on the platform.

The research participants were Indonesian doctors who create content on Instagram. Researchers used the purposive sampling technique to select participants with the following characteristics: (1) Content creator doctors who actively educate through Instagram, (2) of various ages and generations, (3) that can be general practitioners, specialist, and subspecialists. In-depth interviews were conducted from July 2023 to February 2024 in Jakarta and Bandung.

Table 1. Participants' demographic data

No	Name Initial	Gender	Specialist	Follower Numbers
1	ZD	Male	Internist	163.000
2	LY	Male	Pediatrician	310.000
3	AR	Male	Sports Medicine Physician	161.000
4	ZOS	Female	Psychiatrist	99.200
5	KA	Female	Pediatrician	207.000
6	AS	Male	Physical Medicine and Rehabilitation	484.000
7	AH	Male	Obgyn	41.400
8	YYM	Male	Obgyn	458.000
9	TD	Male	Obgyn	214.000
10	RR	Male	Surgeon	104.000
11	AVS	Male	General Practitioner	20.900
12	EB	Female	Pulmonologist	13.900
13	FGH	Male	General Practitioner	69.200
14	MH	Female	Pediatrician	953.000
15	DF	Female	Dermatovenerologist	36.600

Source: Data Processed by Author (2024)

The researchers analyzed the interview data from 15 informants using the coding method with Quirkos, a qualitative software similar to NVivo. Coding in Quirkos allowed the researchers to identify codes from stories, ideas, and meanings expressed by the research participants.

Triangulation techniques were used to verify data by comparing interview results with research subjects. According to Pradistya, 2021, this qualitative data processing

technique involves combining various data collection techniques and sources to identify differences between data obtained from different informants. In this study, expert triangulation was conducted by interviewing Dr. Siti Nadia Tarmizi, Head of the Bureau of Communication and Public Services, Ministry of Health of the Republic of Indonesia. Expert triangulation involves reviewing data with experts, such as supervisors, to determine the accuracy and relevance of information to the research. The goal is to determine the priorities and what can be intervened. Expert triangulation also jointly formulates achieving reasonable solutions in conflicts and accommodates the best problem-solving.

Results

Based on in-depth interviews and observations of Indonesian doctors who are also content creators, researchers found that doctors play an essential role in combating hoaxes, myths, and health stigma on social media. They serve as sources of accurate information, educators, and public health advocates. Utilizing various tools available on social media platforms, such as questions and answers, content creation aimed at debunking hoaxes, myths, and stigma, and collaboration with other experts. Doctors strive to provide accurate information grounded in scientific evidence.

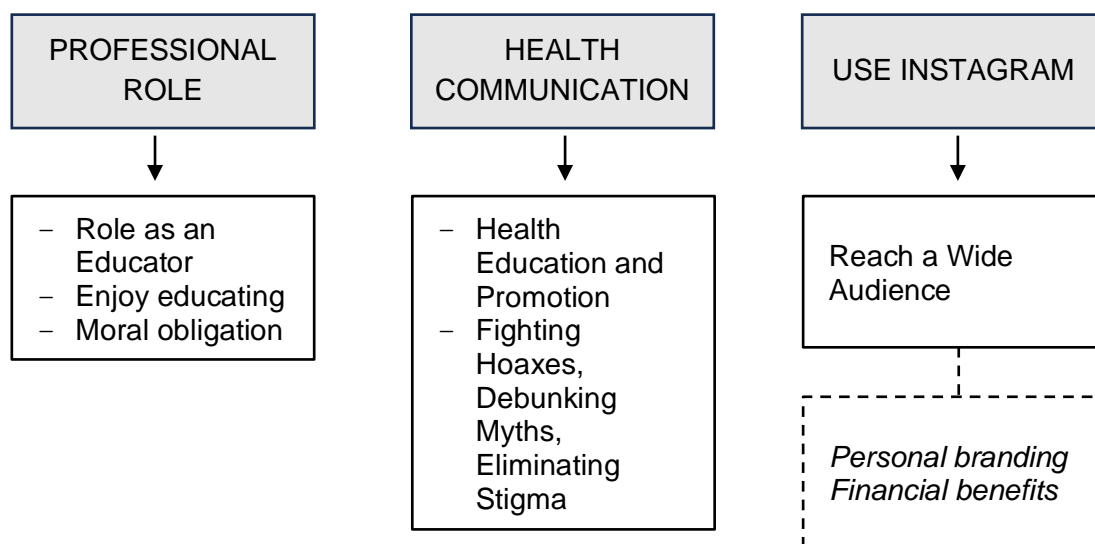


Figure 1. Doctors' Motives for Using Social Media Research Findings by Authors (2024)

Referring to Figure 1, the motives for doctors who are content creators to use social media for education stem from both personal reasons and their professional roles. Many of them use social media to fight hoaxes, dismantle myths, and eliminate stigma. Others said additional motives, such as reaching a wider audience, personal branding, and exploring business, cooperation, and collaboration opportunities.

“I use Instagram to correct misinformation about health. There is a lot of misinformation on social media because anyone can write and say anything on social media. We, as doctors, must balance this by providing correct information based on scientific evidence” (LY, Pediatrician, 2023).

Doctors are increasingly turning to social media as a health education tool, driven by their concerns about misinformation. Many doctors believe that the rise of hoaxes and false information on social media platforms has made it difficult to differentiate truth from falsehood. Consequently, they see social media as an effective means to

address this problem to the public.

“Hoaxes can cause misunderstandings. This is very dangerous. I want to fight that by being active on social media” (AR, Sports Medicine Physician, 2023).

Hoaxes, myths, and health stigma are recurring issues in society. While hoaxes often involve the deliberate dissemination of false information, myths can become deeply ingrained over time, and stigma can result in harmful labeling of individuals.

“I feel like there is still much stigma in my field regarding mental health. So, based on the high level of stigma, not many people are aware of mental health. There are still many myths or misconceptions; I need to share and communicate what I have and my knowledge to society so that they are more open to knowing more about what is true (ZOS, Psychiatrist, 2023).

Doctors, as professionals, consider themselves as trustworthy sources of information. They possess in-depth knowledge of health topics and can clearly and accurately explain the difference between misinformation and evidence-based information. As educators, doctors use their expertise to ensure the validity of the health information they create before sharing it on social media. By presenting accurate and trustworthy content, doctors help the public distinguish between correct or incorrect information and improve public health literacy.

“I am a doctor. As a professional, what I say must be accountable. So, the information must be valid and credible. So, I have to ensure everything I post is true” (KA, Pediatrician, 2023).

Another role doctors play on social media is that of public health advocates, providing material to the public through health promotion. Health advocacy can be carried out by individuals, organizations, and communities. As advocates, doctors help raise public awareness of a health issues. One example of community advocacy in Indonesia is the Healthy Living Community Movement or Gerakan Masyarakat Hidup Sehat (GERMAS), a government initiative aimed at improving the quality of life in the community.

“I create content on social media, and many people are inspired that healthy living is essential. This could prevent, if you look at the data on, Indonesia's high morbidity rates and medical costs. I support government programs such as the Healthy Living Community Movement (GERMAS) program. I have carried out health advocacy for the community through my social media” (TD, Obygyn, 2023).

Doctors often consider health education and health promotion to be synonymous. When they promote health, they are providing health education to the community. Health education on social media is aimed at increasing individual health knowledge, while health promotion is a more structured approach to enhancing awareness, knowledge, and behavior related to health in the community. For example, many pediatricians use social media to form communities of parents or patients for health promotion, hoping that the information and materials will be further disseminated by these educated parents.

“Much misinformation has emerged regarding children's health. I have formed a community. So these parents have guidance. So it is like pediatrics at hand. It leads them in the right direction” (KA, Pediatrician, 2023).

In Indonesia, the spread of health hoaxes was particularly rampant during the COVID-19 pandemic. Although the pandemic was the primary source of health

hoaxes, other falsehoods also proliferate on social media and digital platforms. Some examples include claims of miracle cures without scientific evidence, myths related to vaccination, and false information about foods and drinks with exaggerated health benefits.

Table 2 outlines the misinformation circulating on social media and how doctors are countering them. FGH (General Practitioner, 2023) said it was easy to identify hoaxes because of his medical background. According to him, the spread of hoaxes is not entirely the public's fault; doctor's, as professionals with better knowledge, must address this issue. Regarding myths, FGH said that while not all myths are wrong, not all are true either. Because myths are deeply rooted and passed down through generations, they must be debunked repeatedly to be gradually eroded.

“For example, there is a myth that it is forbidden to bathe at night because it can cause a heart attack. Many heart attacks occur at night, but not because of the shower. Many people believe in that. Myths only deviate from the main problem. Regarding myths passed down from generation to generation, we must not directly force them if they are wrong but still explain the facts based on scientific evidence.” (FGH, General Practitioner, 2023).

Myths about child health are also prevalent in society. MH (Pediatrician, 2023) said that doctors must explain why myths are wrong. For example, the myth that beating a child with an eel can help them walk is illogical – the key is proper stimulation. Parents nowadays, who are more likely to be exposed to correct information, make it easier for doctors to debunk myths.

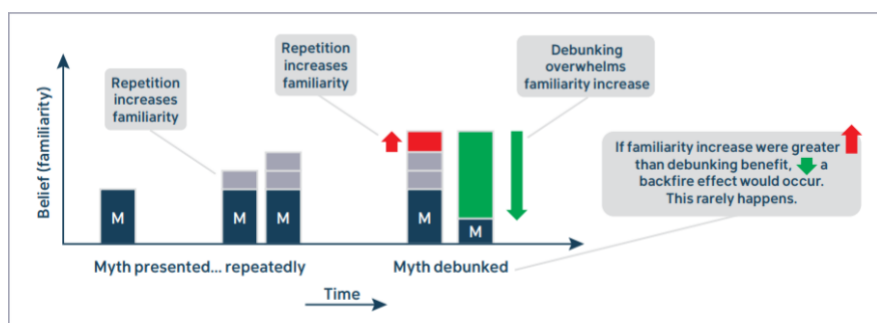


Figure 2. Familiarity Backfire Effect (Lewandowsky, etc, 2020)

Repetition makes information more familiar, and familiar information is generally perceived as more truthful than new information. In Figure 2, when a myth is debunked, there is a risk of it becoming more familiar and thus perceived as more authentic, a phenomenon known as the illusory-truth effect. While early evidence supported this idea, recent experiments attempting to prove the backfire effect through familiarity alone have failed. Therefore, while repeating false information can increase its familiarity, repeating a myth while refuting it is safe and may make the correction more noticeable and effective.

Table 2. Misinformation Versus Doctors on Instagram

No	Type	Misinformation	Versus	Doctors
1	Hoaxes	1 The spread of the Wolbachia mosquito will damage genetics. Mosquitoes with Wolbachia will become mechanical vectors for spreading genetic damage in society.		Not true. The mosquito is the Aedes Aegypti mosquito. Wolbachia is a natural bacterium. So, there is no genetic engineering. Trials and research were carried out in Yogyakarta in 2012. In 2014 it was released in stages. The aim is to reduce cases of dengue (Saputra, 2023)
		2 The MMR (Measles, Mumps, and Rubella) vaccine can cause autism.		To anti-vaccine groups, don't spread fear and lies. Measles is the number 5 killer of children in the world. Indonesia is ranked 10th with the highest number of measles cases in the world (Ayu, 2023)
		3 Specific sound frequencies can increase cell regeneration, body endurance, and energy.		Excessive claims! Specific sound frequencies can reduce anxiety, increase concentration, and help when someone has difficulty sleeping (Haryadi, 2023)
		4 Vaccines can cause DNA cell damage and meningitis.		According to WHO, the number of reported cases of many VPDs has decreased substantially over recent years. Data that vaccination is useful. Meningitis and other diseases can be prevented by vaccination (Yogasatria, 2023a)
		5 Stroke therapy using a spoon		That is not correct. If you experience stroke symptoms, it is essential to seek immediate medical attention. Trying to relieve the symptoms by patting your palms with a spoon is not recommended (Addai, 2023)
		6 Skincare that can get rid of acne in 4 hours		This statement includes an overclaim. Even, the acne nodules that the doctor injected into the acne did not disappear within 4 hours (Febrina, 2020)

No	Type	Misinformation	Versus	Doctors
		7 The size and shape of the penis is determined by a person's zodiac or birth sign.		Zodiac signs do not correlate with penis size and shape. The size of the penis is determined by genetics (Hartono, 2023)
		8 Traditional Ida Dayak Medicine cures crooked bones, and she is healed immediately. The patient laughs and does not feel pain.		Patients experience cases of humeral nonunion or fractures that fail to fuse or prosthetic joints. This fake joint can be moved but is painless (Ibrahim, 2022)
2	Myths	1 Babies are given black coffee to prevent seizures		Giving coffee to babies does not treat seizures; it can cause other health problems, such as diarrhea, vomiting, and impaired iron absorption (Yogasatria, 2022)
		2 Eating at night causes weight gain.		It is fine to have dinner as long as the number of calories consumed is within the body's requirements (Raspati, 2023)
		3 Pregnant women should not sleep in the morning because it is dangerous for their health.		Not true. Myths that are not based on scientific evidence (Bintang, 2023a)
		4 Consume lime juice every day to get pregnant.		There is no correlation between consuming lime and the pregnancy program. It is recommended to have a balanced diet, a variety of nutritional sources, have regular sexual intercourse and improve a healthy lifestyle (Bintang, 2023b)
		5 Drinking coconut water during pregnancy makes the baby white and clean.		Coconut water is good for pregnant women to drink to meet the mineral needs of pregnant women. A baby's skin color is determined by genetic factors (Heriyanto, 2023)
		6 When a baby is sick, the mother can take medicine because the medicine's		It is not related. The drug content that comes out of breast milk is also not sufficient to solve problems in children. If the baby is

No	Type	Misinformation	Versus	Doctors
		benefits will pass through breast milk.		sick, take the baby's medicine. That myths will harm the mother and cause kidney problems (Santoso, 2023)
3	Stigma	<p>1 Stigmatization is the difference between mothers giving their children breast milk and formula milk.</p> <p>2 People diagnosed with tuberculosis are often isolated from other people. Even families separating eating utensils for tuberculosis patients</p> <p>3 Fears about HIV Transmission</p>		<p>Breast milk is the best, but formula can be given if the mother is medically unable to provide breast milk. Formula milk does not have anti-bacterial, anti-viral, anti-allergic or antibody properties. However, that does not mean the child's body is weak. The formula can still provide baby nutrition for mothers with certain medical conditions (Yogasatria, 2023b)</p> <p>In my opinion, separating glasses and plates from TB patients from other people is a stigma. So, the patient can be sad, depressed, and cornered. It's as if they are an ostracized society. TB is transmitted through the air, not glasses or plates. TB enters the body through air contaminated with tuberculosis germs, living in the respiratory tract and lung tissue. It is not correct to separate plates and glasses. If the patient has taken medication, the rate of transmission will decrease (Burhan, 2023)</p> <p>How to reduce the stigma of ODHIV (people with HIV) and ODH? Many feel stigmatized. Fear of being infected, being cornered, and other uncomfortable treatment. The first is education, meaning the public must know what HIV is, its symptoms, and the transmission process. The important thing is how not to spread it. AIDS is not transmitted through shaking hands, coughing, sneezing, or through spoons and forks. If you know, people don't need to worry. Improving public understanding of HIV AIDS.</p> <p>It turns out now that once a person with HIV/AIDS takes regular antiretroviral medication for a maximum of 6 months, the amount of virus that was previously high, the amount of</p>

No	Type	Misinformation	Versus	Doctors
				virus will be low. So, it is no longer contagious. So, the term undetected is impossible (Djoerban, 2023)
4		Mental disorders are a problem of a person's mindset and lack of faith		Mental health problems consist of biological, psychological, and social-environmental factors. For example, biological factors, neurochemical imbalances in the brain, metabolic disorders, etc. If someone hears whispers, sees shadows, or believes something from reality, he experiences hallucinations, delusions, or part of schizophrenia. There are high dopamine levels, and then hallucinations appear. Psychologically, self-confidence, belief, perception, emotion, and how to deal with problems. Socially, there are economic, environmental, etc. problems. There is no one cause of depression because the approach is multifactorial. So, the approach must be comprehensive (Syarif, 2024)
5		Stunting equals poverty		Stunting is a prolonged lack of nutrition. This can be caused by inadequate nutritional intake, impaired absorption, or increased calorie needs. Inadequate intake is one of the causes of poverty because parents are unable to provide complete and balanced weaning food. However, stunted children can also come from the upper middle class, due to ignorance. Such as impaired absorption and increased calorie needs (Hanindita, 2023)

Source: Data Processed by Author (2024)

Merely making minor adjustments will not suffice to eradicate false information. Identifying doubtful content or its source is not enough, especially if it is encountered multiple times. Therefore, it is essential to combat misinformation repeatedly. Medical professionals employ various tactics to counter health-related misinformation on social media, utilizing diverse platforms to educate the public on frequently misconstrued or fabricated as health claims.

"...to combat disinformation on social media. I use a combination of Instagram, Twitter, Facebook, and TikTok" (ZD, Internist, 2023).

Doctors use various social media features to disseminate health information. One popular and useful feature for the informants on Instagram is Reels. Introduced in August 2020 during the COVID-19 pandemic, Reels functions similarly to TikTok. Doctors have found that using Instagram Reels can attract many followers, especially when their educational content goes viral (LY, Pediatric, 2023). Reels allow them to record educational videos up to 90 seconds long, often showing hoax video footage and responding with facts to counter false and misleading news. Another frequently used feature is the Q&A box in Instagram stories, which enables them to interact with followers and answer health-related questions, including those about general health, diseases, hoaxes, myths, or stigma.

Collaboration with other experts is another strategy. Doctors collaborate with other doctors, organizations, communities concerned about health issues, and even government entities like the Ministry of Health. By building a collaborative network, they support and reinforce each other's accurate and trustworthy messages.

"We are collaborating with the Ministry of Health to help promote the six pillars of health transformation in Indonesia and eradicating issues or hoaxes related to the latest Health Bill and hoaxes related to health in general" (AS, General Practitioner, 2023)

Discussion

In this study, doctors have leveraged their professional expertise to provide accurate and detailed explanations, helping the public understand the complexity and context behind health information. By offering evidence-based information, they can strengthen public trust. Additionally, doctors engage the public in efforts to combat health hoaxes on social media by encouraging critical evaluation of the health information encountered on social media. Lewandowsky et al. (2020) recommend two types of corrective information strategies: "emphasis on facts" (reinforcing facts) and "simple and concise refutation" (using fewer arguments in refuting information myths).

Amid an increasingly complex health landscape, Indonesia continues to face the challenge related to the spread of hoaxes, myths, and stigmatizing health information. Utilizing social media to disseminate evidence-based information has proven beneficial in combating misinformation (Joseph et al., 2022). However, the distinction between professional and unprofessional behavior on social media remains unclear for health professionals, underscoring the need for clear guidelines and codes of ethics (Soubra et al., 2022). Health professionals should actively combat misinformation on social media while adhering to ethical standards and guidelines to ensure responsible platforms use.

It is also essential for health professionals to distinguish between the terms used in the context of hoaxes – disinformation and misinformation. Many doctors still confuse hoaxes and myths in their social media content. While both involve spreading false information, there are key differences. In Figure 3, researchers describe the hoaxes, myths, and stigma that constitute health misinformation.

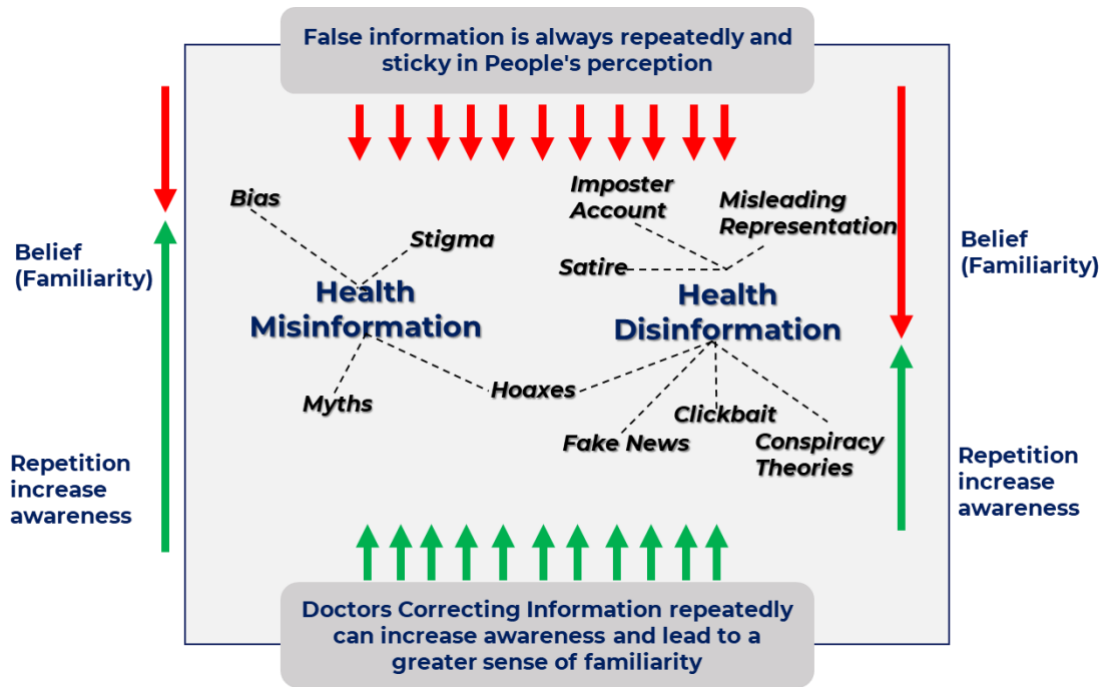


Figure 3. A Model Depicting Indonesian Doctors Fighting Hoaxes, Myths, and Stigma on Social Media.
Data Processed by Author (2024)

By modifying the “familiarity backfire effect” discovered by Lewandowsky in 2020, it is possible to raise awareness and shift public perception and emotional responses. This is particularly important during health crises when misinformation and disinformation can spread widely on social media. Correcting misinformation can help counter misperceptions and improve the accuracy of public beliefs. However, providing corrective information alone is insufficient to motivate behavioral change. To combat persistent hoaxes, myths, and stigmas, it is essential to repeatedly convey accurate facts. False information can be highly resilient and difficult to dispel from people's minds, even when corrected.

In the fight against misinformation, it is crucial for public health officials and experts to collaborate in countering the spread of misinformation during health crises (Arigbede et al., 2022). The impact of misinformation on public health is a priority, and correcting it requires a collaborative effort from public health officials (Pesko et al., 2023).

The fight against health hoaxes necessitates a collaborative approach involving doctors as professionals, organizations, and the government. Collaborative efforts include promoting health awareness, addressing distrust in health institutions, countering misinformation, and ensuring public health literacy. These initiatives are vital for combating health hoaxes and mitigating their impact on public health. This study broadly describes how doctors fight misinformation and disinformation on social media based on their experiences as content creators on social media. The role of doctors in fighting hoaxes, myths, and stigma on social media is very important in combating misinformation and promoting accurate and scientific information. Despite several challenges, doctors in Indonesia are committed to correcting health misinformation on social media.

Conclusion

This research seeks to describe how doctors fight misinformation and

disinformation on social media based on their experiences as content creators. The role of doctors in fighting hoaxes, myths, and stigma on social media is vital for fighting the spread of misinformation and promoting accurate and scientifically based information. Understanding the characteristics of misinformation on social media is essential for designing targeted strategies to mitigate its negative impact.

Despite several obstacles, doctors in Indonesia remain committed to correcting health misinformation on social media. Interventions are carried out to debunk misinformation and provide scientifically correct information explicitly.

In conclusion, the involvement of medical professionals in fighting misinformation in the form of hoaxes, myths, and stigma on social media is significant. They serve as sources of accurate information, educators, and public health advocates. They also utilize various tools available on social media platforms, such as Q&A, to create content and collaborate with other experts, organizations, and governments. Doctors on social media have emerged as key figures in the fight against misinformation online. Given their high trustworthiness in the eyes of the public, doctors are well-positioned to combat today's rampant misinformation. We recommend further research to assess the effectiveness of doctors' use of social media in combating misinformation and disinformation from the public's perspective. Further research could employ quantitative methods to determine the extent of public trusts doctors' content or how this content helps the public discern correct from incorrect health information.

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