Research Article

Effects of misinformation on COVID-19 prevention and control in Nigeria

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Abstract

Objectives: To evaluate the impact of misinformation on COVID-19 prevention and control in Nigeria.

Methods: This review adopted a documentary research method involving personal and official documents sourced from Google, PubMed, and Google Scholar databases from February 2020 to October 2020. Related information was extracted from newspapers, social media, journal articles and grey literatures. The searched areas were: COVID-19 outbreak in Nigeria, spread of misinformation on COVID-19 cases in Nigeria, updates of COVID-19 cases in Nigeria, and the effect of health misinformation on COVID-19 prevention and control.

Results: Data from 31 reviewed literature shows that Social media poses a threat to public health by facilitating the widespread misinformation, especially during health crises. Social media platform (WhatsApp) was highly used in the spread of misinformation across the globe, thereby resulting in fear or tension which often kills faster than the disease itself. These experiences show that Nigeria is not just fighting against COVID-19, but also facing the battle of misinformation which can also be deadly.

Conclusion: Misinformation is increasingly more sophisticated than ever and its potentials spread wider and faster in social media era resulting in fear or tension. Improved e-health literacy and dissemination of increased corrective information are highly recommended.

Keywords: control; COVID-19; corona virus; misinformation; prevention.

Introduction

The emergence of a public health crisis is a complex health problem that affects humans in one or more geographic areas globally. Presently, Nigeria and other parts of the world are confronted with the complicated situations in containing Corona virus (COVID-19) pandemic. This global pandemic is happening in the era of social media when sorting facts from fiction is increasingly difficult as citizens become very active in the process of information gathering, reporting and dissemination. Thus, social media has changed the face of journalism practice from traditional journalism where professionals handle the process of information gathering and dissemination to citizen journalism where the citizens gather, write and share information [1]. The practice of citizen journalism which boycotts the gate-keeping process in journalism mostly results in the dissemination of fake news or misinformation in all the countries of the world, including Nigeria.

Misinformation is defined as explicitly false information according to what is considered to be incorrect by expert consensus, excluding rumors, contradictory or contested information, exaggeration, or preliminary health findings [2]. Wardle and Derakhshan noted that false information which is being shared unconsciously and without any purpose to make harm to anyone is called misinformation; on the other side, disinformation is false information shared consciously to make harm intentionally [3]. Misinformation is false information, which is "both deliberately promoted and accidentally shared" [4]. As a phenomenon that can quickly spread through a range of media and communication channels, misinformation has become a focus for research and debates across disciplines (health communication, political communication, and cognitive psychology) and topical domains that provide valuable insights into how people are misinformed about health, political, and psychological issues, as well as how it affects individual or public perceptions [5]. Evidence from existing literature has affirmed that the predominance and perseverance of misinformation can have societal consequences [6].

However, the issue of health misinformation is a long-running battle in Nigeria. For instance, during the Ebola epidemic in 2014, a lot of false information spread around the country. This included advice, allegedly from the Atta of Igala, that bathing in and ingesting saltwater could stop one from getting the disease. This false information led to too many deaths, while Ebola itself killed only eight persons in Nigeria [7]. The same pattern has re-emerged during the novel COVID-19 outbreak. Following low reported cases of Corona virus in Africa, multiple sources including Kenya Bulletin, African Daily Mail, Abia Pulse News, and CityScrollz published stories on February 10, 2020 with the claim that *the African Blood Genes are resistant to the virus.*

Contrary to the report that *African Blood Genes are resistant to the virus*, Nigeria's index case was recorded on February 24, 2020 in Lagos State of an Italian man who arrived in Lagos and was confirmed positive the next day, discharged after nearly a month of treatment. This report led to the message, *the former President, Olusegun Obasanjo said there is no Coronavirus in Nigeria, The Minister of Health cooks the story to defraud the Government, I want to see the Italian man, I want to get the virus too.* This message seems to confirm the initial message that *the African Blood Genes are resistant to the virus* and also

give the impression that the Nigerian index case is a hoax. **Unfortunately, t**he story later turned out to be false as Centre for Democracy and Development (CDD) fact-checkers and a fact-checking initiative by Premium Times, Dubawa, established that the former President never made such a statement.

However, misinformation and disinformation spread more rapidly in low and middle-income countries like Nigeria that has a history of low trust in government, low social capital, elite division, and low government responsiveness. Misinformation and disinformation are introduced online by many different sources such as vested interests, politicians, news media, gossip, and works of fiction. The reason for the spread of misinformation include the existence of numerous platforms like social media that provide an ecosystem for creation, co-production, and consumption of content by users, proliferation of varying mobile health apps that has largely been without regulation, and the public's quest for information on the preventive measures and the treatment for the epidemic. This study is aimed at ascertaining the credibility of information spread through social media during health crisis, assessing the place of Health Communication (ethical reporting) in COVID-19 prevention and containment, evaluating the impact of social media misinformation on COVID-19 prevention and control as well as the approaches to overcome health misinformation in Nigerian public health crisis.

Materials and methods

The study adopted a documentary research method that enables researchers to use personal and official documents as source materials (data) for evaluating the impact of social media misinformation on COVID-19 prevention and control in Nigeria. Thus, the study extracted related information from newspapers, social media, journal articles and grey literatures. The searched areas are: COVID-19 outbreak in Nigeria, the spread of misinformation on COVID-19 cases in Nigeria, the updates of COVID-19 cases in Nigeria, and the effect of health misinformation on COVID-19 prevention and control. The relevant literatures were sourced from Google, PubMed, and Google Scholar databases from February 2020 to December 2020. We only included articles published between February 2020 and December 2020.

Results

The search identified 469 articles (Figure 1). We removed 58 duplicates, leaving 411 for screening. A subsequent sum of 262 articles were excluded for various reasons (the most common being a review article), leaving 149 articles for full-text inspection. One hundred and eighteen articles were further excluded, leaving a total of 31 articles reporting on four different domains: COVID-19 outbreak in Nigeria, the spread of misinformation on COVID-19 cases in Nigeria, the updates of COVID-19 cases in Nigeria, and the effect of health misinformation on COVID-19 prevention and (Figure 1). All review articles were excluded.

Data from thirty one reviewed literature shows that Social media poses a threat to public health by facilitating the widespread misinformation, especially during health crises**.** As in other times when pandemics like Ebola and Lassa fever were experienced in Nigeria, social media platforms, especially WhatsApp was highly used in the spread of misinformation across

the globe, thereby resulting in fear or tension which often kills faster than the disease itself. These experiences show that Nigeria is not just fighting against COVID-19, but also facing the battle of misinformation which can also be deadly.

Figure 1: Flow diagram for the included studies.
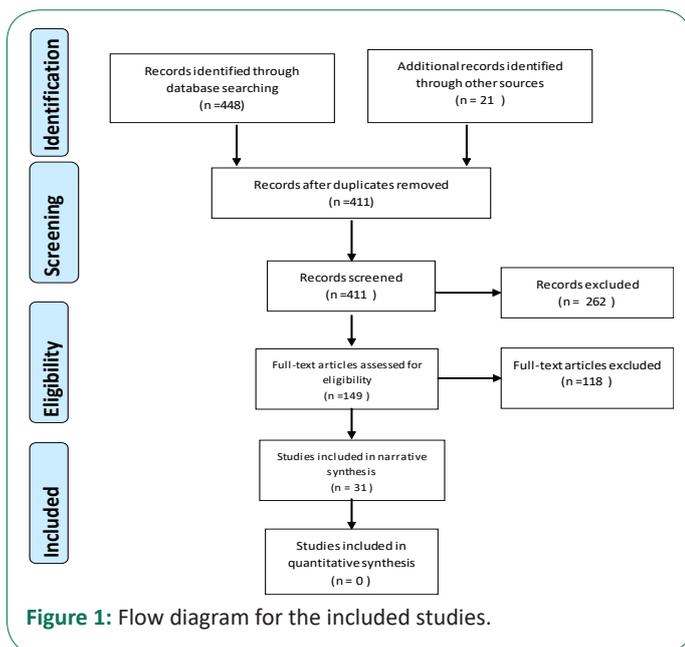
Discussion

Motivation for the review

The motivation for this review was that the major problem faced in Nigeria is misinformation causing a lot of people to lose trust and confidence in the modern medicine and turn more to traditional remedies. When the pandemic started by the end of 2019, the first impression in the Nigerian population was that China was too far and we should not expect to be affected. However, when Nigeria registered its first cases early in 2020, a lot of people took to the social media and were commenting that there was nothing like COVID-19 in Nigeria and that the government is using it as a pretext to receive funds from the international community for COVID-19 response. Gradually, as the pandemic expanded, it was observed that the pandemic touched a lot of people directly or indirectly through their family members. As a result, the other versions of the misinformation came with the results that some people accepted that there is COVID-19 but still saying that the health facilities are "killing" the cases. It was observed that more than a few individuals had symptoms that they suspected to be COVID-19 but decided to contact a provider to come and manage them at home instead. They opined that they do not want to go to the hospital and die. However, this may be associated with stigma because the individuals simply refuse going to the COVID-19 treatment centers but still requested a doctor or nurse for treatment at home. Additionally, with the introduction of vaccines, a lot of people were reluctant to take the vaccines because they think it is not safe. Of course, the vaccine hesitancy issue may not only be due to the vaccine but due to health promotion activities in general because similar observation was recorded for wearing of facemasks.

Public health crisis and misinformation

The understanding of the communication process has changed radically when social media platforms penetrated into the informational landscape. Conventionally, people receive information through interpersonal communication or traditional mass media like TV, radio, newspaper, magazine, or books. The media organisation that produces news content has ethics and house style that enable them to play a gate-keeping role in producing public information. However, the public sphere in the 21st century has undergone a transformation through the adoption of Information and Communication Technologies (ICTs) [8]. The new media in general and social media in particular has become an important source of health information and a platform for discussions of personal experiences, opinions, and issues regarding public health, illnesses, and treatment. It has also contributed to the shift in the role of the public from passive recipients of information to an active and vocal participant in the process of communication [9].

During public health crises, a massive and urgent need for information and effective crisis communication is created among the public. People seek information to help them understand the risks and make decisions on how to respond. It can be difficult to determine what information to trust or not to trust, and emotions such as fear, anxiety, and uncertainty can mobilize people and shape their actions, including how they search for information [10,11]. The spread of information during a health crisis is essential in managing the degree of crisis intensification, people's thoughts, perception, and responses to the situation [12].

However, the global COVID-19 pandemic is happening at a time when sorting facts from fiction is increasingly difficult. An increasing lack of accurate information has become a fundamental challenge to crisis communications [13]. In outbreak scenarios, there has always been misinformation about the cause and progression of the disease via the social media conversation. In Nigeria, an overload of misinformation and disinformation have accompanied the COVID-19 outbreak, thereby provoking fear and exploiting vulnerabilities [14]. A recent example claims that the symptoms associated with COVID-19 are actually caused by 5G technologies (rather than the SARS-CoV-2 Corona virus) and that powerful people are conspiring to hide this "fact" [15,16]. A similar claim was also attributed to the Sultan of Sokoto, Muhammadu Sa'ad Abubakar, a headline published by online blog newfenzy.com on March 7, 2020, claimed the Monarch had said, *Let me say the truth and die, the Italian Corona virus man was paid to act the drama- Sultan of Sokoto.* But clicking on the link to read the full story, it was discovered that the news failed to mention the Sultan again. This has become a trend with news bloggers since the outbreak of the virus. Another version of the misleading information is the rumour of the U.S. President, Donald Trump's statement on 20th March 2020 that Chloroquine is effective in treating corona virus. According to Lagos health officials, three people were hospitalized after taking an overdose of Chloroquine and there has been an increased demand for Chloroquine. The challenging aspect of misinformation is that it can come from supposedly credible sources such as government officials, the mass media, health authorities, and organizations, etc.

However, recent studies indicate that inaccurate and misinformation provided to the public can trigger skepticism and resistance, cause a boomerang effect, prevent the adoption and use of evidence-based preventive measures and treatments, and consequently worsen an epidemic [2,17]. For instance, the health effects of misinformation during the COVID-19 pandemic are incidences of self-medication among the public like taking Chloroquine, concoctions/mixtures, or drinking bleach [18,19].

Thus, the issue of correcting misinformation during a public health crisis is currently of primary concern in the field of health communication, though there are still insufficient empirical studies in the field to help create a theoretical infrastructure aligned with the public sphere in the age of new media [20].

Social media: An amplifier of misinformation in COVID-19 pandemic

It has been widely observed that the controlled dissemination of information through the mass media is no longer the ultimate option to any health organization, government, and health authority due to the proliferation of social media platforms. These platforms were originally created to bring people together or closer; they offered uncensored information and the ability to easily access and share information. Irrespective of the workings of each specific social media platform, they each shared a common goal of stirring up interactions between users. The internet has become the greatest source of health information worldwide due to the use of a huge number of mobile devices and easy and low-cost connectivity with the internet across the world [21]. Barua et al stated that internet technologies are becoming inexpensive and easy to access [22].

During epidemic crises like COVID-19 outbreak, the public receives information overload via social media which are sometimes misinformation (deficient information) or disinformation (intentionally false information). Although fake news is not a new phenomenon, it has recently attracted immeasurable attention due to the popularity of social media for interaction and for the diffusion of news and ideas [23]. Social media can be said to be the livewire of fake news, since it permits individuals to share fake stories among the people with just a click. For instance, the social media platforms adopted in sharing COVID-19 misinformation vary across geopolitical zones and demographics in Nigeria. WhatsApp and Facebook continue to be the most popular social media platforms, whilst Twitter, Instagram and traditional media play complementary roles [23]. It has been widely observed that WhatsApp is a common conduit as it allows for the circulation of different types of media like text, audio, video, and links.

The advent of social media and the users' ability to generate their own content has increased the incidence and reach of misinformation. Fake news and misinformation have been widely observed to be an increasing apparent threat to global health security. Concern over the COVID-19 has dominated global headlines. And now cyber criminals are using all tools at hand to take advantage of this concern to spread phishing and social engineering scams and misinformation [24]. While COVID-19 itself presents a significant global security risk to individuals and organizations across the globe, cyber-criminal activity around this global pandemic can result in financial losses and promote dangerous guidance, ultimately putting additional strain on efforts to contain the virus. It is noteworthy that the quantity and quality of information the members of the pubic receive via social media influences their health-related decisions and public health behaviour [25]. However, the widespread of fake news generated as a result of the pervasive and frequent use of social media demands investigations and interventions.

In affirming this assertion, Under-Secretary-General for Global Communications, Melissa Fleming, in her recent Facebook post said: "We are not only fighting a 'Pandemic', in the words of Dr. Tedros, who leads the World Health Organization (WHO), we are fighting an 'infodemic' (a growing surge of misinformation) [26].

Ethical reporting on public health crisis: The place of health communication in covid-19 prevention and containment

The digital revolution is largely impacting the way journalists and other media professionals produce and share news content [27]. While media professionals and communication scholars recognize the importance of engaging stakeholders via various forms of media, how to effectively and ethically engage with them using both traditional and social media, especially during health crises, lacks consensus.

However, communicating through different forms of media during a public health crisis affects how people learn about and eventually recover from such crises [28]. Social media and mass media create and distribute health crisis information, with emphasis on ethical standards, expectations, and practices. Expectations for organizations to communicate ethically in times of crisis are high, though, few studies have examined the ethical aspect in health crisis communication practice, especially in the complex media landscape where social and traditional media intertwine [28,29].

Health Communication is becoming increasingly relevant in our present world. Its relevance derives from the fact that communication is a fundamental human attribute essential for solving most health problems confronting humanity, since the centrality of the health communication process depends on the functions of communication in creating, gathering, and sharing health messages [13]. Health Communication is thus concerned with seeking increased knowledge gain in every aspect of the health and wellbeing of individuals and communities. For individuals, it raises awareness of health risks and solutions by providing the motivation and skills needed to reduce these risks. It also increases the demand for appropriate health services and decreases demand for inappropriate health services. It makes available information to assist in making complex choices, such as selecting health plans, care providers, and treatments. For the community, it influences the public agenda, advocating for health policies and programmes, promoting positive changes in the socio-economic and physical environments, improving the delivery of public health and health care services and encouraging social norms that benefit health and quality of life [7,13]. Health Communication encompasses several areas including edutainment, interpersonal communication, health journalism, risk communication, media advocacy, organizational communication, crisis communication, social marketing, and social communication. Thus, the essentiality of health communication in the prevention and control of COVID-19 outbreaks in Nigeria and other countries of the world are obvious even to a blind person.

Effects of misinformation on COVID-19 prevention and control

Misinformation on social media platforms increasingly spread faster than the novel COVID-19 outbreak. The widespread misinformation on this pandemic generates numerous deadly consequences on health. To understand the consequences of the spread of false information, the concept of misinformation has recently gained momentum in the fields of communication science and public health [17,22,29].

Misinformation, when occurring among masses, can mislead and therewith pose difficult problems for the society at large which "may have downstream consequences for health, social

harmony, and political life" [4,30]. In the context of public health crises, if left unquestionable, misinformation can challenge the adoption of evidence-based public health efforts from health authorities and organizations as well as increase the spread of the pandemic [2].

In affirming this assertion on the effects of misinformation on COVID-19 prevention and control, Ihekweazu *explains that* misinformation poses a threat to the global community's response to pandemics including COVID-19 outbreak, since fake news, misinformation, and disinformation have led to public panic, thereby pushing some countries to take unilateral decision and action [31]. Although how and why people seek and share health crisis information has been studied for nearly a decade, little is known about what would happen if such required and shared information is incorrect [32].

However, the issue of misinformation in pandemic and public health has gained research attention of various scholars [33]. Previous studies found many adverse effects of fake news like polarization of already divided societies, and reinforces the need for false information awareness as a means of reducing the spread of misinformation among social media users in Nigeria [34]. The challenges of responding to the threat of misinformation and correcting beliefs have heralded an emerging stream of communication research [2,6,22,35,36].

Overcoming health misinformation in public health crisis

It has been widely observed that some of the information the public receives on social media during epidemics are misinformation. Thus, health organizations are required to correct the information to gain the public's trust and influence them to follow the recommended instructions. Notwithstanding that people are motivated to correct the false information during health crisis, correcting misinformation is challenging once it solidifies [6,32].

- However, recent studies show several approaches towards correcting misinformation in health crisis. Some of these approaches are improved e-health literacy, increased corrective information from health communicators, creation and distribution of accurate information, employing the internet as a collaborative tool with physicians and health authorities, increased frequency of corrections, use of advanced communication technology, etc [17,37,38].

- **Improved e-health literacy:** Measuring the efficiency of health literacy programmes is very difficult [39]. However, new resources to teach health and media literacy are becoming increasingly available [40]. This study therefore suggests an improved e-health literacy to overcome the effects of health misinformation during pandemics.

- **Increased corrective information from health communicators:** Health communicators (the media, scientists, governmental bodies, and health practitioners) should elicit and disseminate corrective information. The governmental agencies can successfully use social media to spread the corrective information and dispel misinformation during epidemic [41]. For instance, providing factual alternatives helps to switch out the incorrect information with correct information; and the repetition of corrective information will also help to reduce the continued effect of misinformation [40].

- **Creation and distribution of accurate information:** Basically, scientists/physicians create quality information, while the media communicate it accurately to the public. However, Haber et al. found that 34% of academic studies and 48% of media articles used ambiguous language/words [42]. Apart from scientists publishing in open access journals to communicate directly with the public, scientists and media professionals can strongly collaborate in disseminating accurate or corrective information. Thus, the journalists would assist scientists in presenting their information in a layperson language and also allow scientists to review their articles before publication to minimize errors.

- **Employing the internet as a collaborative tool with physicians and health authorities:** the internet can be a powerful tool when individuals collaborate with their physicians. Recent studies show that online information-seeking had the potential to help patients to be more actively involved in decision-making, aid communication, improve the patient-doctor relationship, and prepare for their doctor's visit. Also, using expert sources to correct health misinformation in social media identified opportunities for health workers and government agencies to capitalize on their organizational credibility to effectively counter misinformation [4].

- **Use of advanced communication technologies:** The use of advanced technology can help individuals to sort reputable from disreputable websites. Communication technologies like social media, a text-messaging app, and other tools can be useful to both rural and urban communities in disseminating corrective health information. Apart from disseminating corrective health information, communication technologies are avenues where fast and affordable health advice is readily available from experts.

Conclusion

Misinformation is increasingly more sophisticated than ever and its potentials spread wider and faster in social media era resulting in fear or tension. Several approaches like improved e-health literacy, dissemination of increased corrective information, creation and distribution of accurate information, employing the internet as a collaborative tool with physicians and health authorities, and the use of advanced communication technologies towards correcting the effects of misinformation in health crisis are highly recommended. Misinformation in public health is still an emerging field, and many questions remain unanswered, especially in its socio-cultural context. Although some health professionals have raised alarm on the capacity and severity of this threat, health professionals, health communicators, and relevant government bodies have been slow to address this issue of misinformation in pandemics. It is very important for the health experts and organizations to correct misinformation transparently, and to address the emotional aspects of it to ensure quick recovery from the epidemic disaster. The study therefore suggests further empirical studies on misinformation in public health crisis in Nigeria and beyond.

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