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Impact of Rumors or Misinformation on Coronavirus Disease (COVID-19) in Social Media

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Abstract--Introduction: The coronavirus disease 2019 (COVID-19) is a respiratory tract illness resulting from Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection, which has spread all over the globe, making it a major public health challenge across health systems. Simultaneously, numerous rumors, misinformation, and hoaxes appeared on several social media platforms regarding the etiology, outcomes, prevention, and cure of the disease¹. The pressing issue is fake news spread more rapidly in social media than the ones from reliable sources and damages the authenticity balance of news ecosystem. Methodology: These articles contained diverse study methods (survey, content analysis, interview, literature review & others) and paradigm models (quantitative, qualitative) to identify the widespread misinformation and its impacts. Conclusion: Mainstream media platforms mostly contain fake news and rumors. The long-standing issue of misinformation regarding different socio-political issues is under constant discussion.

Keywords--COVID-19, mass media, misinformation, SARS-CoV-2, social media.

Introduction

The coronavirus disease 2019 (COVID-19) is a respiratory tract illness resulting from Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection, which has spread all over the globe, making it a major public health challenge across health systems (1). Simultaneously, numerous rumours, misinformation, and hoaxes appeared on several social media platforms regarding the etiology, outcomes, prevention, and cure of the disease. The pressing issue is fake news spread more rapidly in social media than the ones from reliable sources and damages the authenticity balance of news ecosystem (2). A recent analysis showed that during the 2016 presidential election in the United States, fake and biased news were more outspread than news from 19 authentic sources combined (3). It is becoming a public health concern as the exposure to high-volume of information can lead to media fatigue causing relaxation of healthy behaviours essential to protect individuals. Also, misinformation and rumours regarding COVID-19 are masking healthy behaviours (such as hand washing, social distancing etc.) and promoting erroneous practices that increase the spread of the virus and ultimately result in poor physical and mental health outcomes among individuals (4).

For example, in India, a father of three was reported to commit suicide upon hearing his diagnosis of COVID-19. Another example of hazards attributable to improper health communication can be drawn from Nigeria, where the health officials found several cases of overdose of Chloroquine (a drug used to treat malarial parasite) after the news regarding the effectiveness of the drug for treating COVID-19 spawned in the news media⁵. Another rumor about the national lockdown in the United States has fuelled panic buying of groceries and stationeries, which disrupted the supply chain, and exacerbated demand-supply gaps and food insecurities among individuals with low socioeconomic status and other vulnerable populations (6). A similar phenomenon was observed in other economies around the world, which may have prolonged impacts on public health nutrition and psychosocial health among the affected populations (7).

It is understandable that people living in quarantine, isolation, or at risk of infectious disease outbreak are likely to experience psychosocial stress and adverse health outcomes, which may evoke interests in learning more about the disease. However, such situations require assurance complemented by flow of correct information. This need is acknowledged by the World Health Organization (WHO), which has partnered with several social media and seven major tech companies namely Facebook, Google, LinkedIn, Microsoft, Reddit, Twitter, and YouTube, and agreed to stomp out the frauds and misinformation, and promote critical updates from healthcare agencies⁸. Despite the agreements, the rumors are still rampant all over the platforms, which necessitates several multipronged interventions to address the same. First, the frontline healthcare providers should be equipped with the most recent research findings and accurate information, which can be used in direct caregiving and communicated with the patients or populations at risk. This may also leverage more robust patient-provider communication and result in better health outcomes (9).

Previously integration of information technology successfully improved patient

care in managing mass casualty incidents. This brought several positive outcomes in the form of optimization of resources, an extension of care and improved health outcomes of patients. Secondly, mass media, community organizations, support groups, and civil society may play critical roles in disseminating authentic information¹⁰. To achieve this, it is necessary to build strategic partnerships at local and global levels, connecting offline and online resources in a coordinated manner so that validated information is communicated across platforms. Third, all hoaxes and rumors should be removed from all online platforms, and only scientifically sound information should be allowed to increase awareness among mass people. Advanced technologies like natural language processing or text-mining approaches may be helpful in detecting online content that has no scientific basis. The latest data-mining algorithms are successfully detecting the unique characteristics of all kinds of fake news and removing them from their respective platforms (11).

Twitter, Reddit, and Amazon have already implemented such methods to remove fake accounts or product reviews. Application of the same principals in removing all rumors and hoaxes regarding this pandemic despite its unique challenges is evidently feasible. Therefore, social media and other online providers should adopt such measures to identify and eliminate potentially harmful misinformation and rumors. Fourth, online portals and personnel involved with the production and propagation of such misinformation should be brought to justice. Local and national regulatory authorities and law enforcement agencies should be made aware of these challenges to address these challenges in respective contexts comprehensively. In this regard, governments of many countries have arrested individuals involved with the spread of such rumors (1). However, before enforcing any of these laws worldwide, authorities should conduct a proper investigation and ensure the legal rights of the convicts. Fifth, common platforms should be launched providing precautionary information in both online and offline media on a large scale. Successful strategies for mass media campaigns from the last few epidemics should be identified and implemented⁷. These messages should be culturally tailored and translated to several languages to increase outreach. The media coverage of the recent SARS, H1N1, MERS-CoV, Ebola, and H7N9 epidemics had a significant effect on reducing the total spread of these pathogens by promoting healthy behaviors. Factual information regarding the COVID-19 is also expected to have similar results. Sixth, using telemedicine approach evidence-based care and information services should be made available for people with limited access to care such as people in the rural areas, elderly population, or simply stuck at home due to lockdown.

Impacts of misinformation during COVID-19 Xenophobia

Mass media provide individual narratives to a different phenomenon, including biomedical research. Narrative communication deeply affects public perception, especially during the healthcare crises. Riddled with decontextualization, pseudoscience, fake news and rumors, many consider COVID-19 as a result of intentionality and the personal interests as the falsity is not an only problem, but also rumors are spread by highly influential individuals even accompanied by hate speech and racism as well .These rumors are strongly associated with the

stigmatization of immigrants and discrimination against them. The COVID-19 pandemic's politicization is adopted by several anti-immigrant and hate groups spreading various conspiracy theories claiming the spread of Corona Virus as a result of migration (IIOM). With thousands of new cases every day, Corona Virus causes unprecedented disruption in human societies. Due to the broader spread of misinformation, our understanding of COVID-19 is still evolving. Undermining all the efforts made by health experts worldwide, this misinformation is characterized by adverse outcomes, including intolerance, racism, inequality, and unhealthy behaviors. In this regard, Rzymiski and Nowicki examined whether and to what extent Asian medical students face discrimination in Poland. The researcher conducted a cross-sectional study and randomly selected a sample of $n = 85$ students from Poland having Asian origin¹¹. Participants revealed that they are facing discrimination and isolation due to their origin. They also have to spend their time in isolation, which is adversely affecting their career development.

LGBT healthcare rights violation

Similarly, the World Health Organization also declared Lesbian, gay, bisexual, trans, and intersex (LGBTI) communities more vulnerable during the current pandemic. Due to the stigmatization and discrimination against LGBTI, several individuals face difficulty accessing healthcare services. They face online hate speech and bullying at home due to the lockdown situation, hindering their fundamental human rights (UNHR). According to GMHC even old age LGBT individuals living in congregate facilities may also face deprivation of medical services. Healthcare professionals can refuse their treatment and consider them as potential carriers of COVID-19 (unconscious bias). Also, among many public healthcare systems, the LGBT community lacks sex and marital status, making them ineligible for the provision of healthcare services (Lokot and Avakyan).

Psychological distress

Jayaseelan et al. investigated the impacts of Social Media based misinformation on audience behavior during COVID-19. The researcher used a qualitative approach and selected a sample of $n = 13$ undergraduate university-level students. Findings showed that students consider Social Media as a source of information, and most of them like to share the information with others without authentication. However, misinformation covers a significant part of these posts affecting their healthcare behavior and raises uncertainty regarding the local healthcare system. Furthermore, false information about COVID-19 is not a new phenomenon as many academics, researchers, journalists, and policymakers approached World Health Organization and emphasized that this would cause serious risk to public mental and physical health (Brennen et al.). People living in isolation, risk of infectious disease, and quarantine rely mainly on media for information that is more vulnerable to psychological disorders. Curiosity and fear lead them to seek information through different media platforms. In this regard, misinformation plays a vital role in undermining one's mental health by inducing fear, anxiety, and stress. Misinformation also caused food insecurities among the masses with low socio-economic status, intensively exacerbated demand–supply gaps, and largely disrupted supply chain worldwide (Tasnim et al.). In this regard,

Ravi Philip Rajkumar investigated the impacts of Covid-19 and myths on individuals' mental health (10). The researcher conducted a thematic review study and found that Anxiety, Stress, and Depression are the most prominent psychological problems during COVID-19. Also, these disorders were strongly associated with disturbed sleep among the public.

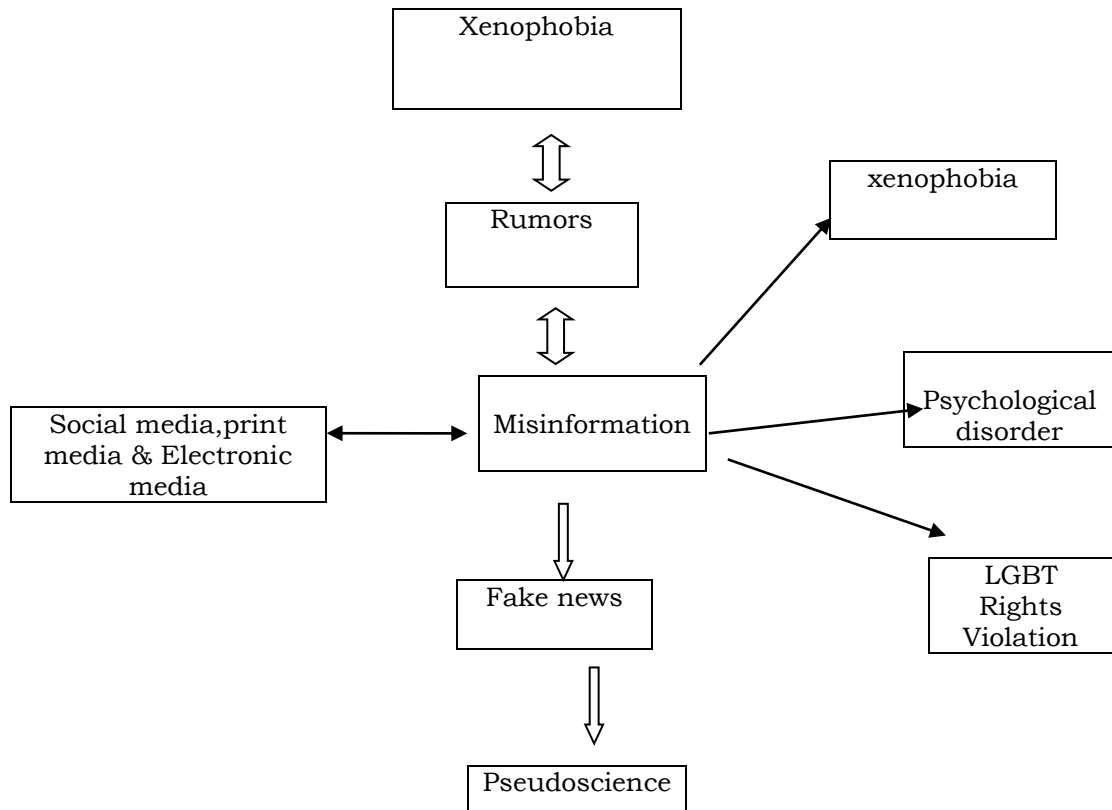


Figure 1. Below provides a graphical representation of misinformation sources, types, and potential impacts.

Methodology

Literature review studies tend to highlight existing concerns with valid argumentation. It is more like finding pieces of a puzzle which further highlights the importance of the relevant phenomenon (Library). In this regard, the current study also utilized a Systematic Review Approach to retrieve suitable research investigations (Habes et al.). The researchers systematically gathered *peer-reviewed* published research articles from 2015 to June 2020. These articles contained diverse study methods (survey, content analysis, interview, literature review & others) and paradigm models (quantitative, qualitative) to identify the widespread misinformation and its impacts.

Moreover, the researcher mainly gathered articles from the top 17 journals of media, social sciences, psychology, medicine, health, humanities, and human

rights from the 2018 ISI Web of Knowledge Journal Citation Reports according to the value of their impact factor, Scopus and Web of Science indexation. The selected journals involved: International Journal of Biological Science, Educational Research and Reviews, Social Science and Medicine, Health Communication, Annual Review of Public Health, and others. However, many of the citations also belong to situation reports, perspectives, policy briefs public by the World Health Organisation, International Labour Organization (ILO), and others. Therefore, a total of $n = 35$ of the published research content was reported according to the designated criteria.

Discussion & Conclusion

Mainstream media platforms mostly contain fake news and rumors. The long-standing issue of misinformation regarding different sociopolitical issues is under constant discussion. However, misinformation during the current pandemic raised many concerns regarding Public health and communication (Ognyanova et al. $N = 35$ studies and reports explicitly witnessed rampant misinformation and its impacts on minorities worldwide (Posetti and Bontcheva). These results are compatible with the World Health Organization (WHO), declaring misinformation as an equally challenging phenomenon (Vicol). A number of studies on Covid-19 were reported. Choudhary and Chawle reported on Life Lessons of the Pandemic COVID-19. Masurkar D also reported on Myths about Covid.

Similarly, most cited studies witnessed Social Media as a primary source of misinformation due to increased online media dependence. These results are consistent with the study conducted by Brennen et al., they found a strong significant correlation between Social Media platforms (Facebook, YouTube & Twitter) and fake news. Also validated by Pulido, Ruiz-Eugenio, et al., they stated that although globalization plays a vital role in spreading healthcare information, Social Networking platforms also contain misinformation. COVID-19 is a dominant part of online discourse, and harmful, personal, and opinionated content adversely affects the current situation. Misinformation is a critical risk for global health and well-being, and during the COVID-19 outbreak, people are unable to find any unreliable source of information (Tedros Adhanom Ghebreyesus). Likewise, much of the information we receive from Social Media resources are unreliable (Orso et al). The situation gets worst when users re-share the news without further confirmation (Mian and Khan). As noted by Islam et al., Social Media platforms facilitate users to share information of their choice, enjoying the freedom, and represent their opinion.

The world is mostly facing misinformation as COVID-19 significantly amplified the growth and spread of misinformation through different media platforms. Although the role of Social Media is prominent, traditional media platforms are also a source of spreading rumors and false beliefs. Accompanied by hate speech, online bullying, and discrimination, misinformation is a significant challenge during the current pandemic. Counteracting against the misinformation can help to mitigate the impacts of COVID-19 in the short-term. It will also help us “build back better” by addressing the primary cause of the outbreak by promoting common humanity, solidarity, unity, and inclusion (United Nations).

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