

The Spread of Rumors Through Interactive Media During Crises: The COVID-19 Pandemic as a Case Study

Prof. Ghada Abdulrahman Al-Turif

Abstract—In recent decades, the world has witnessed tremendous advancements in communication and media, particularly interactive media, which has enabled individuals to produce and exchange information instantly and on a large scale. During major crises, interactive media emerges as a vital tool for information dissemination. However, it also becomes fertile ground for the spread of rumors and misinformation, especially in the absence of oversight or source verification. The COVID-19 pandemic stands out as one of the most significant global health crises, revealing the challenges of information management. During this period, rumors proliferated at an unprecedented rate, influencing public opinion and exacerbating societal anxiety and confusion. Interactive media platforms played a central role in this context, becoming primary sources of information—both accurate and false—raising critical questions about the nature of these platforms, their responsibilities during crises, and the public's awareness in engaging with them. This paper examines the phenomenon of rumor spread through interactive media during crises, using the COVID-19 pandemic as a model to analyze causes, patterns, and impacts, with the aim of proposing mechanisms to mitigate and combat rumors.

Keywords—Rumors – Interactive Media – COVID-19

I. INTRODUCTION

The world has experienced significant transformations in communication and media in recent decades, particularly with the rise of interactive media, which allows individuals to produce and share information rapidly and widely. During major crises, interactive media becomes crucial for information dissemination but also a breeding ground for rumors and misinformation, especially when oversight or source verification is lacking.

The COVID-19 pandemic highlighted these challenges, as rumors spread unprecedentedly, affecting public opinion and increasing societal anxiety. Interactive media platforms, such as social media, became key sources of information—both true and false—prompting essential questions about their role, accountability during crises, and public awareness in interacting with them.

The COVID-19 pandemic created an unparalleled state of anxiety and confusion due to the rapid spread of the virus, the multiplicity of information sources, and the lack of accurate facts in the early stages of the crisis. Interactive media, especially social media platforms, exacerbated this anxiety by

becoming fertile ground for rumors and misinformation, given their ease of use and rapid content circulation [1]. Unsubstantiated interpretations and conspiracy theories about the virus's origin and spread further heightened societal tension [2]-[8].

Even after vaccines were announced and vaccination campaigns began globally, rumors persisted on interactive media platforms, warning against vaccines and promoting ideas linking them to severe health risks or hidden agendas. This led to societal divisions—between supporters, opponents, and skeptics—despite assurances from health authorities about vaccine efficacy and safety [9] [10].

Studies confirm that uncertainty during health crises creates a broad space for rumor propagation, with content characteristics, source credibility, and platform dynamics all contributing to their reproduction and spread [6]. Research also underscores the importance of studying rumor mechanisms, analyzing their content, and understanding the regulations and penalties governing their circulation [11] [12]. Conversely, studies highlight the role of official government platforms in countering rumors and fostering public trust through transparent and regular communication [13].

Given this context, the study's problem lies in the need for a deeper understanding of interactive media's role in spreading rumors during health crises, using the COVID-19 pandemic as a case study. It examines the nature of prevalent rumors, their impact on public opinion, and strategies to counter them, leveraging interactive media as a tool for mitigation rather than amplification. Thus, the central research question is: What is the impact of rumor spread through interactive media during health crises?

This study addresses a contemporary phenomenon with implications for public health and societal security. It sheds light on interactive media's role in shaping public awareness during crises and clarifies the relationship between social media use and rumor proliferation. The findings can help stakeholders develop effective strategies to counter misinformation in the future. Additionally, the study provides a scientific framework for designing media and awareness policies to enhance credibility and transparency during crises.

II. RESEARCH METHODOLOGY

This study adopts a descriptive-analytical approach, observing and analyzing the phenomenon of electronic rumors in digital environments. It relies on scientific observation to collect data about this socio-informational phenomenon,

Prof. Ghada Abdulrahman Al-Turif, Department of Social work, College of Humanities and Social Sciences, Princess Nourah bint Abdulrahman University, P.O. Box 84428, Riyadh 11671, Saudi Arabia

meticulously tracking new content published via new media and other interactive platforms in alignment with the research objectives.

A. Study Objectives

This research focuses on analyzing the phenomenon of rumor spread through interactive media during crises, using the COVID-19 pandemic as a model to examine causes, patterns, and impacts. It aims to:

1. Develop a deeper understanding of the phenomenon.
2. Propose theoretical insights into mitigating rumors in interactive media environments.
3. Highlight the role of media institutions and official entities in combating rumors.

B. Research Questions

1. What is the concept of electronic rumors in terms of origin, characteristics, and factors contributing to their spread, particularly during crises?
2. What is the relationship between crises and rumor spread, with a focus on digital environments and interactive media as fertile ground for rumors?
3. What rumors spread through interactive media platforms during the COVID-19 pandemic, and how did they influence individual behavior?
4. What strategies can be proposed to counter rumors during crises?

III. ANALYSIS OF ELECTRONIC RUMORS

Rumors are generally defined as unverified or false information circulated through traditional or technological means (p. 422) [14]. People often believe and repeat what they hear, sometimes adding new details. Some define rumors as fabricated information [15] [16]. The Oxford Dictionary describes them as "a story or report of uncertain or doubtful truth," while Webster's defines them as "a statement or report without confirmed truth." These unverified claims may later prove true, partially false, or remain unresolved [17].

With the rise of social media, individuals can interact, build networks, and enhance social capital (p. 9) [18]. Platforms like Facebook, Twitter, LinkedIn, YouTube, Instagram, and mobile apps allow users to share glimpses of their lives, communicate, and express opinions (p. 42) [19].

Electronic rumors refer to news, topics, or issues circulated via the internet or social media, differing from traditional rumors in content and structure. They are expressed through text, speech, images, audio, animations, and videos (p. 92; p. 1) [20] [21].

Rumors during Crises:

Rumors thrive during crises (e.g., pandemics, wars, natural disasters, or economic turmoil) due to:

- Psychological stress from fear and uncertainty.
- The need for immediate information, even if unverified.
- Lack of transparency or delayed official responses.
- Media confusion and conflicting sources.

In such contexts, rumors can cause social or economic chaos,

triggering irrational behaviors like panic buying or violence, and undermining social cohesion [22].

Characteristics of Rumors [23]:

- Rapid spread: Circulate quickly, especially on social media.
- Modification and exaggeration: Grow more sensational with each retelling.
- Uncertainty: Lack official confirmation but are often accepted as truth.
- Emotional appeal: Exploit fear, anger, or hope to bypass critical thinking.
- Selectivity: Spread more in environments aligned with their cultural, social, or political content.

Factors Contributing to Rumor Spread [24]:

1. Psychological factors: Anxiety, fear of the unknown, confirmation bias, and the need to fill information gaps.
2. Social factors: Group interactions, over-reliance on close contacts as sources, and the desire to share "exclusive" news.
3. Technical factors: Social media's rapid content sharing, weak or absent oversight, and difficulty tracing original sources.

A. The Relationship between Crises and Rumor Spread:

Interactive media, characterized by high interactivity, real-time updates, and wide reach [25], played a pivotal role during COVID-19 by:

1. Disseminating official health information (e.g., via WHO and health ministries' social media accounts).
2. Countering rumors through awareness campaigns in collaboration with influencers.
3. Fostering community solidarity (e.g., online volunteer initiatives).
4. Gauging public opinion through digital polls and hashtags [26].

Interactive media also shaped public opinion by:

- Influencing behavior (e.g., promoting social distancing).
- Amplifying influencers' voices in health and social debates.
- Facilitating digital advocacy (e.g., pressuring governments on vaccine distribution) [15].

B. Rumor Types and Content During COVID-19

The pandemic saw a surge in rumors, including:

- Medical rumors: Unproven treatments, mask skepticism, and vaccine misinformation [3], [5] [6].
- Conspiracy theories: Lab-origin claims or hidden agendas [1] [2].
- The "infodemic" phenomenon—information overload, both true and false—complicated truth discernment [4] [27]. Emotional language and influencer endorsements further fueled rumor circulation [28].
- Governments responded with:
 - Legislation: Penalties for misinformation [11] [12].
 - Official platforms: Fact-checking initiatives (e.g., "Fatabayyano" in Saudi Arabia).
 - Awareness campaigns: Multimedia content to debunk myths [9] [13].

C. Strategies to Counter Rumors

1. Transparency: Regular, clear official updates to reduce information gaps [29].
2. Rapid response: Early debunking to limit rumor spread [30].
3. Digital literacy: Critical thinking and source verification skills [31].
4. Unified messaging: Coordinated efforts to prevent information conflicts [32].

IV. CONCLUSION

The study underscores interactive media's dual role during crises: a conduit for accurate information and a vector for rumors. Mitigating rumors requires institutional collaboration, public awareness, and smart use of digital tools to ensure balanced information flow and societal trust.

ACKNOWLEDGMENT

Special gratitude are also owed to peer reviewers and coworkers, whose insightful criticism significantly raised the caliber and readability of this work. The platforms and data sources examined in this study are also thanked for providing pertinent information to the public during the COVID-19 epidemic. This study was not specifically funded, and the author has disclosed no conflicts of interest.

REFERENCES

- [1] S. Chen, B. Mulgrew, and P. M. Grant, "A clustering technique for digital communications channel equalization using radial basis function networks," *IEEE Trans. on Neural Networks*, vol. 4, pp. 570-578, July 1993.
<https://doi.org/10.1109/72.238312>
- [2] Y. , Xiang, Y. , Li, and Z. Yang, *The Role of Social Media in the Spread of Misinformation during the COVID-19 Pandemic: A Global Perspective.*, (1st ed.). New York: Springer., 2020.
- [3] B. Svenja, "Psychological defenses against COVID-19 rumors: Coping mechanisms and social consequences.," *Journal of Social Psychology*, vol. 45(2), pp. 203-220, 2020.
- [4] J. Binchen, *Digital Misinformation in Health Crises: The Case of COVID-19*. Berlin: Springer-Verlag, 2021.
- [5] D. Nithil, "Infodemic: The spread of information and misinformation in the digital age.," *Journal of Information Science*, vol. 36(4), pp. 412-429, 2020.
- [6] M. Alawad, *Impact of Social Media on Health Communication during the COVID-19 Pandemic*, 1st ed.). Cairo: Dar Al-Masrah, 2020.
- [7] M. Rajib, "Conspiracy theories and misinformation about COVID-19: A social media analysis," *Health Communication Review*, vol. 12(3), pp. 98-112, 2020.
- [8] S. Al-Khalifa, *Electronic rumors and their impact on society during the COVID-19 pandemic*, 1st ed. Riyadh: Dar Al-Thaqafa, 2020.
- [9] M. , Ben Riyala, and A. Sarai, *Rumors and their implications during health crises: A case study of the COVID-19 pandemic* , 1st ed. Amman: Dar Al-Fikr Publishing, 2020.
- [10] UNICEF, *Addressing COVID-19 Vaccine Misinformation: Challenges and Solutions*. Geneva: United Nations Children's Fund (UNICEF), 2021.
- [11] Saudi Ministry of Health, *Vaccination against COVID-19: Accurate information for public awareness*, 1st ed. Riyadh: Ministry of Health, 2021.
- [12] H. , Yunya, Z. , Liu, and Y. Zhang, "Legislative approaches to countering COVID-19 misinformation," *International Journal of Law and Public Health*, vol. 5(3), pp. 34-46, 2020.
- [13] K. Al-Farh, *Legal measures to combat rumors during the health crisis: The case of the COVID-19 pandemic*, 1st ed. Cairo: Dar Al-Fikr Al-Arabi., 2020.
- [14] R. Zayan, *Combating rumors via social media platforms: Case studies from the COVID-19 pandemic* , 1st ed. Beirut: Dar Al-Kitab Al-Arabi, 2020.
- [15] M. , Dayani, J. , Smith, and R. Williams, *The Spread of Rumors in the Digital Age: A Social Media Perspective*, 1st ed. London: Sage Publications, 2016.
- [16] M. Castells, "Communication power," *Oxford University Press*, 2012.
- [17] X. , Liang, T. , Huang, and Q. Zhao, *Digital Misinformation: Analyzing the Role of Social Media in the Spread of Rumors*, 2nd ed. New York: Springer, 2015.
- [18] M. Donovan, "The Nature of Rumors: Investigating the Role of Informal Communication in the Spread of False Information," *Chicago: University of Chicago Press.*, 2007.
- [19] Y. Huang, *The Network Society: The Influence of Social Media on Social Capital*, 1st ed. Oxford: Oxford University Press, 2013.
- [20] S. Khalifa, *Social networks: Their impact on social communication and the building of social capital* , 1st ed. Cairo: Dar Al-Kitab Al-Jamie'i, 2016.
- [21] M. Al-Sharif, *Electronic rumors: A study on the impact of digital media on rumors*, 1st ed. Riyadh: Dar Al-Thaqafa, 2015.
- [22] A. Takran, *The Emergence of Electronic Rumors: An Analysis of Social Media as a Platform for Misinformation*, 1st ed. Los Angeles: Routledge, 2015.
- [23] F. , Sarah, S. , Ahmed, and J. Ali, *Rumors during crises: Causes, effects, and ways to confront them*, 1st ed. Riyadh: Dar Al-Ma'arifa, 2020.
- [24] A. Al-Dour, "Social psychology and media: A study on rumors and mass communication," *Cairo: Dar Al-Nahda Al-Arabiya*, 2004.
- [25] S. Al-Nashri, *Digital media and rumor spread: The impact of social media during crises*, 2nd ed. Jeddah: Dar Al-Fikr Al-Arabi, 2013.
- [26] A. Abdelhamid, *Interactive media and its impact on shaping public opinion during crises*, 1st ed. Cairo: Dar Al-Fikr Al-Arabi, 2018.
- [27] WHO, "Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation," *World Health Organization*, 2020.
- [28] Y. Binchen, "The impact of misinformation about COVID-19 vaccines on public health decisions," *Journal of Public Health Research*, vol. 10(2), pp. 120-134, 2021.
- [29] Z. , Xin, J. , Li, and X. Wang, "Emotional language and social media influencers in the spread of COVID-19 rumors," *Journal of Social Media Studies*, vol. 8(1), pp. 74-85, 2021.
- [30] F. Al-Mousa, *Media transparency and its role in reducing rumors during health crises* , 1st ed. Jeddah: University Publishing House, 2020.
- [31] M. Al-Khatib, *The role of immediate response in confronting rumors during health crises*, 1st ed. Cairo: Dar Al-Fikr Al-Arabi, 2021.
- [32] C. , Wardle, and H. Derakhshan, "Information disorder: Toward an interdisciplinary framework for research and policymaking," *Strasbourg: Council of Europe Publishing.*, 2017.
- [33] G. Abdullah, *Unifying official media discourse in confronting rumors during crises*, 1st ed. Dubai: Dar Al-Fikr Al-Arabi, 2021.