

How Social Media Framed the Effectiveness of COVID-19 Vaccine

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Abstract - The place of social media in various spheres of life cannot be overemphasized. This study examines the place of the social media in framing the effectiveness of the COVID-19 vaccine. It relied on data from selected social media, observation and the internet. Qualitative method, systematic review, content and thematic analyses and interpretive and descriptive analytic tools were employed. The analysis shows that individuals are influenced by the way or manner in which social media frame the effectiveness of the COVID-19 vaccine. The study concludes that as demonstrated by YouTube, Instagram, Facebook, Twitter (X), and TikTok, how social media portray the effectiveness of COVID-19 vaccine influences individuals' attitude towards, and acceptance or rejection of the vaccine. It recommends effective use of social media by all and sundry for portraying and determining the effectiveness of the COVID-19 vaccine. It also charges all organs of society involved in creating awareness about the vaccine to be honest about its effectiveness or ineffectiveness. the abstract for the article.

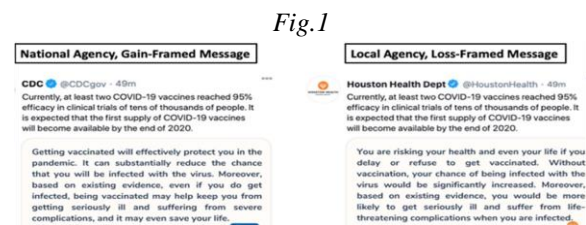
Indexed Terms - COVID-19 vaccine, effectiveness, framing, social media

I. INTRODUCTION

The COVID-19 rose in Wuhan, China on 31st December, 2019 (Holshue et al., 2020; Li et al., 2020). It was on February 11th, 2020 that the World Health Organization (WHO) officially named the pandemic as the COVID-19 (Guan et al., 2020; WHO, 2020). The COVID-19 is a disease caused by a virus named SARS-COV-2, which can be very contagious and spreads quickly (Center for Disease Control & Prevention, 2023). It is an infectious

disease that affects people indiscriminately. The media framed the news about COVID-19 and its vaccine in different ways (Pattison et al., 2022). Many countries of the globe were plagued by the pandemic, suffering its immediate and later effects. The pandemic exerted and left behind multifaceted effects on almost all sectors or spheres of life—economies, education, polity and governance, social lives, human health inclusive of mental health, people’s psychology, men, changed interaction, work and teaching-learning patterns, and so on (Hashmi et al., 2021).

Given the diverse serious effects of the COVID-19 pandemic, different efforts were made to quell it. As a global public health threat, finding a solution was highly interesting for global leaders. Earlier than usual, vaccines were introduced. While there are several vaccines, the Center for Disease Control & Prevention (CDC) recommends using Pfizer-BioNTech, Moderna, or Novavax vaccines in the United States (CDC, 2023). The recommendations are based on age, time since the last dose, and in some cases, the first vaccine received. People who are moderately or severally immune-compromised have specific recommendations for COVID-19 vaccine. At the top of CDC’s prevention of COVID list is a reminder to “stay up to date with COVID-19 vaccines”. Fig. 1 below illustrates the admonition of the CDC:



Source: Huang and Liu (2022)

On the global stage, WHO advised that: “the vaccines are safe”. In July 2021, WHO states in its article “Vaccine Efficacy, Effectiveness, and Protection” viz: “COVID-19 vaccines have proven to be safe, effective, and life-saving.” The WHO (2021) also advises people to “take whatever vaccine... made available”. This paper is informed by the need to interrogate the extent of the effectiveness of the vaccines. It seeks to explore the framing of the vaccines by social media, with a view to determining the impact of social media framing of the vaccine on the public. In answering the question of how effective the vaccines have been, this study will examine the framing of the effectiveness of the vaccines by the social media. The focused social media are YouTube, Instagram, Facebook, Twitter (X) and TikTok.

II. EMPIRICAL REVIEW OF SOME RELATED STUDIES

Ritchart et al. (2024) explores the framing of the COVID-19 virus by newspapers across the globe. Their study discloses that majority of the newspapers paid attention to how the vaccine was developed and distributed. It found that the emergence of the virus roused certain actions and consequences, including preventive actions to attain public health, attributive responsibility, tracking and documenting, pro-science, and safety and efficiency. The study lends credence to the present one despite being concerned with newspaper, unlike the present one that is concerned with social media framing of the COVID-19 vaccine.

Greenleaf et al. (2023) examine the impact of social media on the acceptance or rejection of the COVID-19 among people in Uganda. The study posits that it is unclear to determine the attitude of people in sub-Saharan Africa. The present study observes that it is generally difficult to determine people’s attitude, not that of people in sub-Saharan Africa alone. The results show that social media had a insignificant impact on the acceptance of COVID-19 vaccine in Uganda, because there was low rate of participation in social media. The low participation was because many Ugandans had no smart phones as at March, 2022. Thus, social media were not associated with the status of COVID-19. The study concludes that the traditional media are capable of reporting COVID-19

vaccine, trends, and other public health matters. There is need for change in such places. Poverty and lack of technological development are what account for such backdrop, for which it is difficult to determine the place of social media in public matters, such as the COVID-19 vaccine.

Ahmad Rizal et al. (2022) explore social media impact on COVID-19 vaccination, which had led to having two groups on it –those in support and those against it. The study avers the social media influence people’s attitude towards the vaccination and the decision for it. It sees to the role of information completeness and accuracy. The results show that both traditional and social media play crucial role in the acceptance of, attitude towards, and decision for the COVID-19 vaccination. The finding of the study lends credence to the position of this current study and thereby justifies the claims of the present study about social media and COVID-19 vaccination.

Cascini et al. (2022) reveal a negative correlation between reliance on social media and vaccine intentions, and vaccine hesitance is the dominant theme many studies are preoccupied with. Information from social media is proven by some of the extant studies to cause fluctuation of attitude towards vaccination. Also, the study found some extant literatures identifying both positive and negative effects of social media on vaccination. The study lends credence to the present study in several regards. Huang and Liu (2022) examine how COVID-19 vaccines are promoted using framing agency type and psychological uncertainty: “2 (gain vs. loss frame) × 2 (high vs. low uncertainty) × 2 (national vs. local agency)”. Their study proves framing to be the most effective among the three variables, whereby uncertainty and agency interact. Given the less persuasiveness involved, psychological reactance affected the acceptance of, or attitude towards the COVID-19 vaccines.

Also, the study done by Igboeli and Ejimkeonye (2021) engage with how the framing of the COVID-19 by Daily Sun, Vanguard and National Light newspapers influence Awka readers’ perception of the pandemic. The study also concerns itself with ascertaining respondents’ perception of the virus, and whether or not the aforementioned newspapers

created the deserving awareness about the virus. It indicates that the newspapers framed the COVID-19 how they wanted and influenced the readers in their reports. The results prove that majority of the respondents confirmed being influenced by the way newspapers report the COVID-19 pandemic, as the reportage is positive, informative, educative and didactic. The study concludes that the virus gained significant attention of the media alongside their positive reactions to it. The work calls on the media to only report factual happenings concerning the COVID-19 to the public. Although the foregoing study focuses on mass media, it relates thematically to the present study in that it highlights the influence of the media on the masses as a result of the framing of media content about the COVID-19.

Lee et al. (2022) explore individuals' news seeking behavior regarding the COVID-19 through social media. The finding of the study shows that media use and knowledge calibration regarding COVID-19 correlate; negative knowledge of COVID-19 obtain on social media platforms; and positive as well as factual knowledge of the pandemic is obtained from the traditional media. The implication of these findings is that although traditional and electronic media are involved in the reportage of COVID-19 matters, the framing of the matters by the former is better and more appreciated than those by the latter. Lee et al. (2022) hold that social media exert negative influence on members of the public regarding COVID-19. Their submission aligns with that of Krause et al. (2020), who decry the negative effects of social media on public health, as in the case of the COVID-19. Relating the foregoing views to this study, it follows that social media play more negative than positive role in the framing of the effectiveness of COVID-19 vaccine. Bode and Vraga (2015) prove inoculation to a means through which misinformation and the like negative trends on social media can be corrected.

Hubner (2021) examines the framing of the COVID-19 by media in the USA and found that they were preoccupied with framing the outbreak of the pandemic alongside the socio-economic consequences it brought forth upon the country with its citizens and residents. The analysis of what the media in the first two months of the outbreak of the

COVID-19 by Mutua and Ong'ong'a (2020) reveals that BBC, CNN, Al-Jazeera and the People's Daily framed sustained discourse of the themes of the adverse impact of the COVID-19, its economic consequences, the severe health challenges, the human interest, and the attribution of responsibility. See Fig. 2 below – a research report headline that symbolically captures the foregoing.

Fig.2



Source: [emergenhttps://www.journalism.org](https://www.journalism.org)

A good number of studies on media framing of content abound. A few of them additional to the above ones suffice here. Accordingly, Entman (1993), Chong and Druckman (2011), and de Vreese and Lecheler (2012) noted that the idea of framing rests on the theoretical postulation that the multiple perspectives on certain subjects or themes in news (media content) indicate that news or media content can be framed variously by different media depending on what to make out. Entman (1993) has emphasized the framing of functions via information and silence. The author notes that “to frame is to select some aspects of a perceived reality and make them more salient” (Entman, 1993, p. 52). This statement connotes the agenda-setting role of the media. Thus, Framing Theory and Agenda-Setting Theory correlate on the idea that based on what they do or say about a subject matter, the media give importance or relevance to a person or a subject matter and thereby rouse same from the masses. Upon doing so, members of the public develop attached relevance or importance to the person, the theme or the subject made salient or important by the media. Ritchart et al. (2024) note that different aspects of news are framed, which include sourcing, organization, and space allocation, as each of them conveys a given frame that informs the reader about how to think about a given matter.

Scheufele and Iyengar (2014) and Chong and Druckman (2011) point out that framing theory is applied not only in mass communication but also in political discourse, communication and analysis. From their position, one understands that the theory can be applied to this study too. Dan and Raupp (2018) and Rothman et al. (2006) are of the view that framing theory is also applied in health communication, with specific focus on disease prevention. That is, when there is an outbreak, different frames are used to describe it and the associated situations and trends (Choi & McKeever, 2019; Pieri, 2019; Ophir et al., 2021). Khairy (2020) affirm the practical application of framing theory in Egypt during the COVID-19 pandemic as regards media coverage and disseminated information to news consumers. Also, Chong and Druckman (2011) emphasize that the use of frames in news stories is substantially impactful on perception and behavior of the audience (Chong & Druckman, 2011). Their emphasis highlights the impact of media framing of a subject matter, as in the framing of the COVID-19 vaccine by both traditional and modern (new) media.

III. METHODOLOGY

Social media contents were sourced from certified organizations, private groups, professionals, and individuals. All the 13 snippets content gathered from the chosen social media are all about COVID-19 cum the effectiveness of the vaccines provided or approved by the WHO and CDC for it. The choice of YouTube, Instagram, Facebook, Twitter (X), and TikTok for this study is informed by their popularity and extent of usage. Information on them is easily and quickly created, posted, disseminated and shared. On these media, users can connect others on their accounts/profiles and share information very easily and fast. For example, a post on Facebook gets posted automatically on Instagram.

Selected excerpts were collected from these chosen social media. The search terms made used of are the following: “COVID-19”, “COVID-19 Vaccine”, “COVID-19 vaccine and the media” “What about COVID vaccine”, “Is COVID-19 vaccine effective”, “COVID-19 vaccine and children”, “COVID vaccine and news”, thoughts about COVID-19 vaccine,

“Social media and COVID-19 vaccine”, and “is COVID a myth”. The search was targeted at getting “wrong” or “inaccurate” contents so as to have the two-sides of the phenomenon. The essence is to make a comparative analysis of the two sets of contents to determine the right content from a critical perspective rather than a mere assumption of the either set of content.

Experiences and heard stories about COVID-19 alongside its vaccines constitute sources of primary data for the study. The excerpts obtained from the selected social media were examined critically in order to realize logical thoughts on the views about COVID-19 cum its vaccines. The critical examination gave rise to objectively synthesized data on the phenomenon. The data having empirical groundings back the claims of the present study and authenticate the data sources.

IV. SOME POPULAR SOCIAL MEDIA IN BRIEF

YouTube is an online video-sharing media platform, having the mission of giving everyone a voice and showing them the world. The media works by allowing users to find whatever they are looking for within its community of creators, viewers, and listeners. On daily basis, millions of people get informed, educated, entertained, inspired and so on YouTube. Its developers make it safer by applying what they describe as the “four Rs”:

- i. Remove content that violates their policies;
- ii. Reduce the spread of harmful misinformation and borderline material;
- iii. Raise authoritative sources for news and information; and
- iv. Reward trusted creators.

Instagram is a photo and video-sharing media platform that offers people the power to build a global community in the midst of different communities of the world. By so doing, the world is brought closer together. It is one of Meta Company’s platforms. The developers see it as their “responsibility to foster a safe and supportive community for everyone” through their anti-bullying and safety policies and parent’s guide for teen users.

Facebook is a social media platform and social network service that is part of the Company meta

platforms. The media shares in the Company’s goal of giving people the power to build community and bring the world closer together. According to the media’s profile, 100 billion+ messages are shared daily to help people stay close even when they are far apart, and one (1) billion+ stories are shared daily to help people express themselves and connect.

Twitter (X) is a social media platform and microblogging service that distributes short messages. It is influential in shaping politics and culture in the early 21st century. A user types a message and sends it to X’s server, which relays it to a list of other users (known as followers) who have signed up to receive the sender’s messages. Perhaps, the most noteworthy in the evolution of Twitter is its increased use as a tool for journalism. Twitter has emerged as an up-to-the second news source. The New York Post in July 2023 reported that the media has over 541 million monthly users.

TikTok is the world’s leading destination for short-form mobile videos. Its mission is to inspire creativity and bring joy to users. The media has a section dedicated to supporting its community through COVID-19. It runs several programs that meet users’ needs. Their programs include TikTok for Good that uses the media to impact positively on users, including raising awareness. Another TikTok program, TikTok for Developers, helps creators navigate and make use of powerful tools in the media to bring out their content. Also, Effect House of TikTok allows users/creators to add a trendy touch to their stories/content. The other programs are TikTok Rewards, TikTok Browse, TikTok Embeds and Advertise on TikTok.

IV. DATA PRESENTATION AND ANALYSIS

Excerpts from the chosen social media read:

- i. “...the greatest medical scam in the history of the world!” (Instagram)
- ii. “crimes against humanity” (Instagram)
- iii. “Gavi, the vaccine alliance” (YouTube)
- iv. “A health professional speaks specifically to vaccines that require two doses – indicating that taking both doses is effective as just a dose will give a 6 month maximum protection” (TikTok)

- v. Based on data from CDC, “the vaccine is not too bad for children” (TikTok)
- vi. “A veteran officer shares that he chose to be vaccinated because the vaccine is safe and effective” (Facebook)
- vii. “The vaccine causing the death of some children, indicating that the vaccine is not safe for kids” (Twitter (X))
- viii. Using an image, a post content on Twitter (X) illustrates “the sick state” of vaccinated college students”
- ix. “The vaccine damaged someone’s blood vessels, causing the person to be blessed severely after being vaccinated” – former medical officer (Twitter (X))
- x. “Research suggests that getting more shots of the vaccines affects its efficiency as vaccinated persons get sicker than unvaccinated persons” (YouTube)
- xi. “A man, who ‘died’ twice after being vaccinated, now seeks compensation after surviving” (Facebook)
- xii. “Not following the usual vaccine-making process tells how the COVID-19 vaccine was made faster, for an urgent need (YouTube)
- xiii. “No proper study was conducted to arrive at this ‘address” (Facebook)

As shown above, using a collection of news headlines describing the effectiveness of the COVID-19 vaccine in percentages that started from 100%, the percentage reduced to 41%. From 100%, it dropped to as low as 20%. The user states that “we were all lied to” about the effectiveness of the vaccine. Mentioning “Gavi, the vaccine alliance” in particular, YouTube shares with over 23 thousand subscribers how some vaccines reduce the risks of COVID infection by 80%. Emphasis was made on getting vaccine boosters for longer protection, which questions the effectiveness of the vaccine. If it were really effective, there would be no need to get vaccine boosters. This is rarely the case with any effective vaccines.

It is quite arguable that ineffectiveness of the vaccine in children accounts for the higher percentage of unvaccinated children. Of course, no parents would want their children dead in the name of getting vaccinated. Having seen or heard the results of the effects of the vaccine on the children vaccinated

already, the other parents are bound to become scared of giving their own children out for the same *deadly* vaccine(s). Apart from children, the image showing how vaccinated college students always left school for hospitals adds to the fact that the vaccine is ineffective in and harmful to youths and even adults. Even if debunked, inference makes it obvious or logical to understand that the former medical officer spoke about the devastating effects on the vaccine using irony from experience, not a hearsay story. There is no doubt that such data from an experienced medical officer justifies the thinking that the vaccine is ineffective.

Interestingly, the ineffectiveness of the vaccine is made known on social media. There is no doubt that without social media reports on the COVID-19 vaccines, many people would not have known about the story of the man who had it tough from the vaccine and subsequently sued for compensation. The Excerpt (x) above informs the social media audience that “vaccinated persons get sicker than unvaccinated persons.” This highlights the implications of taking the vaccines. By keeping the public abreast of such vital piece of information about the vaccine, the social media undoubtedly plays a significant role in framing the effectiveness of the vaccine, highlighting the risk of the vaccine to the individual. By that token, the individual is left to reflect on the situation as well as the observation before deciding on taking the vaccine or not.

Recall that a Facebook story presents a man who ‘died’ twice after being vaccinated and later seeks compensation after survival (Excerpt xi). Also, the effectiveness of the vaccine is questioned by the defying of the usual vaccine-making process, which thereby tells how the COVID-19 vaccine was made faster than supposed, merely to meet an urgent need. The implication of this expression is that for effective vaccines to be made, the due process(es) must be followed. Regrettably, the reverse is the case in the making of the COVID-19 vaccine(s). This study observes that despite the urgent need of vaccines, it is not appropriate to jump or disregard the due process. The attempt by CDC to debunk the myth about the negative effect of vaccine on menstrual cycle suggests the body is aware of the lapses of the vaccine, but tries to make defenses a way of covering

the shortcomings and keeping its image. It is in disagreement with them at CDC that some members of the public made different posts kicking against their excuses about the reported effects of the vaccine on menstrual cycle. One of the posts is that captured in (xiii) above. Talking about no proper study being conducted to arrive at the finding on the effect of the vaccine on menstrual cycle, the CDC displays subjectivity, sentiment and superiority complex. It does not identify the parameters for a proper study that it would its results. Even if it eventually does, the parameters may possibly be characterized by subjective bias and claims, and the commonly known inadequacies of the parameters set out by such a body.

Finally, from the above, it is clear that the chosen social media are capable of framing the effectiveness of the COVID-19 vaccines in ways that could rouse the interest of members of the public to the vaccines. That is to say, even some members of the public, who had previously rejected the vaccines, later got influenced by social media into accepting them. On the other hand, some of them, who were either personally interested in the vaccines or had rejected them, got influenced by these social media to be uninterested in the vaccines. The effects of the vaccines, which are not aired out by the bodies involved, were/are being unveiled on social media by different content creators. It follows that the above media influence the public in significant ways. In reflection on the above brief on the chosen social media, it is quite obvious that with YouTube, members of the public were/are able to see the world practically and symbolically through pictorial devices and means of communication. YouTube, by virtue of its mission, allows users (members of the public) to look for and get rich videoed contents on the COVID-19 vaccines.

From the above brief on YouTube, it is quite clear that millions of people get informed, educated, entertained and inspired about the vaccines on daily basis. Also, YouTube, by its nature and preoccupation, helps to avert misinformation, fake news, misleading content, disinformation and other like trends on the social media. The noted points apply to the other chosen social media, as regards the brief on them. Social media present diverse views on

the effectiveness and ineffectiveness of COVID-19 vaccines. From different angles, different people use varied media to share their concerns. While some see the vaccine as a “scam” (something fake), others consider it to be a means of protection. The distinct views result from experiences, available information, and individual thoughts. So, on one hand, the content presents the vaccine’s effectiveness as instable– one that fluctuates in a blink. On the other hand, the vaccine is portrayed as being effective.

It should be noted that human decisions matter in making the vaccine highly effective or ineffective. For example, the decision to take all the required doses would lead to realizing the effectiveness of the vaccine. It follows that some persons consider and portray COVID-19 vaccines as being effective, while others see them as being ineffective. The two sets of perspectives are created, portrayed and influenced by social media, among other societal instruments like the mass media and other agents of socialization. Some see the vaccine as ineffective, because of the harm it has caused to individuals who get vaccinated. Ranging from physical damage to emotional stress and cases of death, the vaccine is presented as unsafe and ineffective.

V. OBSERVATON

It can be observed that the vaccine is presented as ineffective because of the myths surrounding it. While the content seeks to address some of the myths in xxi, users will not accept it just like that. And, in one instance, it is requesting a “proper” study to ascertain whether or not they are true rather than mere myths. The content speaks to three myths that the vaccine:

- i. is ineffective because it was made faster or took an unusual process;
- ii. won’t work regardless of the number of shots/doses taken; and
- iii. is ineffective because all the so far known vaccines affect the menstrual cycle of people who go near vaccinated people.

CONCLUSION

It is quite clear from the study that the social media play essential role in various spheres of life. Their

role in the health sector is evidenced in the framing of the effectiveness of the COVID-19 vaccine projected by the WHO and the CDC. The analysis of both primary and secondary data shows that social media framed the effectiveness of the vaccine in ways that allow individuals to make informed decisions about the COVID vaccine. Without making any conclusion on whether or not the vaccine is effective, the social media present all the necessary information about the vaccine– discussing conducted research, addressing myths, talking about possible side effects, and illustrating with numbers or figures and images. The presentation implies that every audience of the social media is at will to make informed decision on accepting or rejecting the vaccine based on their critical consideration and reflection on the available data on the social media about the effectiveness or ineffectiveness of the vaccine.

It is important to point out that some media outlets have taken steps to restrict or stop the sharing of unverified/inaccurate content related to the COVID-19 vaccine and its effectiveness. The steps are targeted at ensuring a safe media environment, where accurate information is shared, and threats to human health and life are prevented. The restriction may hinder the expression of certain factual negative experiences about the vaccine and objective criticism against the vaccine. Yet, controlled restrictions are necessary to avoid misinformation, fake news, disinformation and other negative trends associated with the social media. All in all, the effectiveness of COVID-19 vaccines is of global concern, because the pandemic is a serious threat to public health and posed serious challenges to different nations then as well as beyond. The concern is necessitated by the dire need to make informed decision on the vaccine.

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