COVID-19 NON-PHARMACEUTICAL INTERVENTIONS (NPI) MESSAGES ON THE SOCIAL MEDIA: USERS' PERCEPTION AND RESPONSES

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ABSTRACT

The COVID-19 Pandemic remains one of the global health crisis in the era of social media with countless instances of use of the platforms to spread all forms of its related information. Since the global outbreak and the ravaging effects of the pandemic, social media platforms, (especially Facebook and WhatsApp) had been inundated with divergent, exaggerated and oftentimes controversial information on the Non-pharmaceutical Interventions (NPI), recommended as part of measures to curtail the virus spread. Perhaps, owing to the carelessness and user-friendliness of the platforms, some of these Intervention messages are being debated and shared which could give rise to doubts, confusion and controversies among receivers. It, therefore, becomes pertinent to interrogate the perception and responses of active social media users to these Non-Pharmaceutical Interventions messages on social media sites amidst other contradictory and controversial information available to them on the platforms; how any form of doubts or controversies arise within them in the process and how their cognitions about these interventions may have been altered in the process. These will help determine how the platforms contribute towards shaping their level of acceptance or otherwise of these interventions. The study employed Survey and Focus Group Discussions to examine the responses and perception of the active social media users in South-East Nigeria to the COVID-19 Non-Pharmaceutical Interventions (NPI) messages on these platforms. A sample size of 500 active social media users for a survey and 4 participants each for FGD were selected from 3 out of the 5 States in South-East Nigeria. It was found that the respondents perceive the COVID-19 Non-pharmaceutical Intervention messages on the social media to be attracting sentiments and spread of unverified information, and the social media to be conveying contrasting details about the NPI which do not account for their less frequent compliance to these NPI messages. They comply with the NPIs but less frequently and not exclusively because the social media presented them but rather environmental changes, and considering presentations made from other media sources where only a few of them, doubt

the efficacy of the NPI messages and harbor some doubts about COVID-19. The study concludes that social media is ideal for instantaneous information transfer during a pandemic and that the NPI messages on the platforms hardly arouse the interest of users in South East because such messages had been existing overtime on various media of communication.

Keywords: COVID-19 Pandemic; Perception; Responses; Social Media; Non-pharmaceutical Interventions (NPIs)

1.0 INTRODUCTION

The COVID-19 pandemic which began in Wuhan, China emerged as a global health threat(Li, Liu, Yu, Tang & Tang, 2020). The pandemic was first reported as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in December 2019 (Guan, Ni, Hu, Liang, Ou, He, Liu, Shan, Lei, Hui et al., 2020). This report was accompanied by robust transmission of the virus across the globe. The use and spread of information on the virus in various media platforms seems to redefine some expectations by the media and potentially enthroning the social media with such powers of more regular updates on the information about the pandemic. However, various social media platforms attempted to challenge the conventional media as users had sharable social media links containing information on COVID-19.

In view of the over aching effects of the pandemic which was considered as a global threat, various governments took actions as recommended by WHO known as Non-pharmaceutical Interventions, (NPIs) aimed at reducing contact rates in the population. These interventions include measures that individuals and communities can take to slow the spread of infection (Anderson, Heesterbeek, Klinkenberg& Hollingsworth, 2020). These NPIs include compulsory measures underwritten by public health orders, such as closures of various services and establishments, quarantine/isolation, restrictions on movement; and voluntary measures, often promoted by government and institutions, such as hand washing, disinfection of surfaces, use of alcohol-based hand sanitisers, coughing into an elbow, use of mask, working from home and maintaining a physical distance from others (Holly, Clare, Ikram, Kazi, Yanni, Mohammed, Alexander, Jonathan &Saiful, 2020). Further described as community mitigation measures, these NPIs are a diverse group of measures that people and communities can take to slow the spread of infection. They can also be classified as personal protective measures (e.g., respiratory etiquette, face-covering use of sanitisers and handwashing), quarantine of exposed community members and isolation of cases, measures aimed at increasing physical distancing (e.g., school closures and dismissals, redesign of living and working places, and postponing or cancelling mass gatherings); and environmental measures (e.g., routine cleaning of frequently touched surfaces) (Qualls, Levitt, Kanade, Wright-Jegede, Dopson, Biggerstaff, Reed&Uzicanin, 2017).

Besides, some studies had interrogated and analysed some social media sentiment trends towards COVID-19 Non-Pharmaceutical Intervention messages (Jingcheng, Erin, Victoria. & Gerald, 2021), widely recognized as a crucial area of sustenance by different countries. The explosive growth of social media can be explained by the global social distancing directives and lockdowns (Nabity-Grover, Cheung, & Thatcher, 2020) as experts and the general public are opportune to quickly spread information to a large number of individuals (Malecki,

Keating, &Safdar, 2021). As a result of the growing controversies rapidly escalating on the social media platforms, some authorities, Health professionals and individuals share some kinds of details on the platforms which are often debated. While social media could serve as a spontaneous means of spreading information by authorities and as an asset to developing effective risk communication strategies and responses (Nabity-Grover, Cheung, & Thatcher, 2020), these information are subject to amplifications, and arguments on social media. Therefore, the events unfolding concerning the COVID-19 pandemic and some vital issues raised on the social media platforms and further amplified therein, seem to suggest that these Social Media platforms constitute threats to global public health as the virus itself, as it contributes towards undermining the desired global response to NPIs (WHO, 2020; Chatwin, Butler, Jones, James, Choucri, & McCarthy, 2020). In view of these threats, this work seeks to interrogate the perception and responses of the social media users towards the Non-pharmaceutical Intervention Messages on the platforms.

2.0 STATEMENT OF PROBLEM

Over the course of the COVID-19 pandemic, governments around the world have utilized different NPIs at different times and with different stringencies (Hale, Angrist, Cameron-Blake, Hallas, Kira, Majumdar, Petherick, Phillips, Tatlow, and Webster. 2020). Social media platforms were regularly being inundated with divergent, exaggerated and oftentimes controversial information on Non-pharmaceutical Interventions (NPI). Since social media offers the privilege of User-Generated Content, some health professionals share the NPIs which are amplified in various ways by other users on the platforms, thereby creating doubts, worries and tension among users. These effects could affect how the users respond to these NPI messages received on the platforms. Social media are often being used to both mitigate and, unfortunately, propagate harm to users to counter some of the narratives offered by experts on the pandemic. Some users raise arguments concerning the existence or otherwise of the virus in the African continent, use of local mixtures or concoctions to treat the virus, respiratory effect of prolonged use of face mask, the inefficacy of the introduced vaccine and numerous other contrasting information frequently overloaded to users on various platforms. This situation is regarded as 'Infodemic' used to describe the "overabundance" of information in response to an epidemic and applies equally to factual information as well as misinformation (Tangcharoensathien, Calleja, Nguyen, Purnat, D'Agostino, Garcia-Saiso, et al, 2020). This peculiar development of false and unchecked information, which is part of the reasons behind the recently introduced concept of infodemic (WHO, 2020) has become quite prominent as some international bodies had expressed concerns about such posts on COVID-19 (Robson, 2020; BBC, 2020). In view of these issues, we ask, how do the social media platforms shape the perception and responses of users towards the NPIs already available to them on the platforms?

3.0 OBJECTIVES OF THE STUDY

This study is aimed at ascertaining users' perception and responses to social media Non-pharmaceutical Interventions messages in South East, Nigeria. However, the specific objectives are:

1. To find out how the social media users in South East perceive the COVID-19 Non-pharmaceutical interventions messages in the social media platforms.
2. To discover their responses to these messages received on the platforms.
3. To ascertain the extent to which the social media platforms fuel controversies among the users regarding the COVID-19 Non-pharmaceutical intervention messages.

Research Questions

In line with the objectives, the following Research Questions were posed:

1. How do social media users in South East perceive COVID -19 Non-pharmaceutical Interventions messages in the social media platforms?
2. What are their responses to these messages received on the platforms?
3. To what extent do the social media platforms fuel controversies among the users regarding the COVID -19 Non-pharmaceutical Interventions messages?

3.0 LITERATURE REVIEW

The coronavirus pandemic remains the first global health crisis in the social media era. As documented by Krishna & Cho (2021), Coronavirus disease 2019 (COVID-19; caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)), emerged in Wuhan, China in December 2019. The COVID-19 was brought into the notice of the authorities in late December, early January 2020, and, after investigation, was declared as an emergency in the third week of January 2020" (Hua & Shaw, 2020). To date, the COVID-19 pandemic remains the greatest public health challenge all over the world, given the effects of the virus on numerous countries with confirmed cases, deaths and so on. Some relevant bodies had over the years recognized the significance of the NPIs and considered them efficient in the event of a health crisis. For instance, The World Health Organization Influenza Pandemic Plan of 1999 puts considerable attention on the role of Non-pharmaceutical public health interventions to contain or delay the spread of a new influenza virus (WHO, 2005). The global spread of the COVID-19 virus demonstrates the importance of effectively using Non-pharmaceutical interventions (NPIs) to reduce transmission of the virus and limit mortality (Ferguson, Laydon, Nedjati-gilani et al, 2020).

Meanwhile, The Non-Pharmaceutical Interventions (NPIs, also called community mitigation strategies) involve the use of face masks, physical or social distancing, isolation of ill persons, quarantine of exposed persons, contact tracing, travel restrictions, school and workplace closures, and cancellation of mass gatherings (Ferguson, Cummings, Fraser, Cajka, Cooley & Burke, 2006; Lai, Ruktanonchai, Zhou, Prosper, Luo, Floyd, Wesolowski, Santillana, Zhang, Du, et al, 2020). These NPIs are public health actions to prevent and/or control SARS-CoV-2 transmission in the community by slowing the spread of illnesses and are further considered the best way of controlling a pandemic when the general population has little or no immunity against them (Centers for Disease Control and Prevention, 2020; European Centre for Disease Prevention and Control, 2021).

As it applies to the currently globally ravaging COVID-19 pandemic, the use of NPI is targeted to help reduce the spread of the COVID-19 virus (Chen, Xu, et al, 2020; Leung, Wu, Liu, & Leung, 2020; Kong, Jin, Sun, Kao & Chen, 2020; Cowling, Ali, Ng, et al, 2020).

Since 2019 till date, many relevant bodies and governments across the world have adopted different NPIs (e.g., social distancing, quarantine, isolation, lockdowns, curfews, travel restrictions, closures of schools and colleges) (Chen, Shi, Zhang, Wang, 2021; Alanezi, Aljahdali, Alyousef, Alrashed, Mushcab, AlThani, Alghamedy, Alotaibi, Saadah&Alanzi, 2021) to help curtail the viral spread. The NPI include early case isolation, social distancing using face masks, closing of schools and businesses shot-down and further requesting some authorities to agree in advance on a range of containment strategies, the population be informed and willing to adopt the necessary measures (WHO, 2005).

However, scholars had likened the spread of this information to the pandemic itself, as social media offer users the privilege to spontaneously spread information even faster than the virus (Depoux, Martin, Karafillakis, Preet, Wilder-Smith & Larson, 2020). Social media is equally efficient at spreading information as misinformation (Gottlieb & Dyer, 2020). In January 2020, a Belgian physician, Kris Van Kerckhoven, told the newspaper Het Laatste Nieuws that 5G was life-threatening and linked to the coronavirus (Topf& Williams, 2021). Anti-5G groups began spreading the rumor and in early April, celebrities started inflating the rumour by posting it to Twitter and Instagram (Andrews, 2020). This resulted in spate of arson attacks on 5G cell towers across Europe (Cerulus, 2020). Public figures making false and misleading claims, such as advocating for the use of unproven or potentially dangerous therapies, can cause public harm and exacerbate the outbreak (Tangcharoensathien, Calleja, Nguyen, Purnat, D'Agostino, Garcia-Saiso S, et al, 2020). In fact, since the COVID-19 pandemic, the use of social media (SM) has massively grown as people use the platforms to stay connected with family, friends, and colleagues, view live streams (Holmes, 2020; Nabity-Grover, Cheung, & Thatcher, 2020), get people more informed of risks and mitigation (Malecki, Keating, & Safdar, 2021) as well as changing their appropriate behaviours under NPIs, especially the social distancing mandates (Solnick, Chao, Ross, Kraft-Todd, & Kocher, 2021). Scholars had also explained that these NPIs could have an indirect positive effect on preventive behaviours (Liu, Geng, Chen, Zhu & Zhu, 2020; Oh, Lee, & Han, 2020) and could create room for controversies, issues and sentiments. However, these sentiment trends towards the pandemic on various social media platforms have already attracted a wide academic enquiry (Wang, Lu, Chow &Zhu, 2020b; Li, Wang, Xue, Zhao, & Zhu, 2020; Wang, Schraagen, Kim Sang, and Dastani. 2020a)

Even when not overtly harmful, the sheer volume of dubious or not useful information poses the risk of drowning out more useful information. For instance, there is a study which examined 117 videos (with nearly 1.2 billion total views at the time of publication) about coronavirus posted to TikTok, the popular video-based social media platform but found that there was little to no useful information offered (Basch, Hillyer & Jaime, 2020). Another study of 113 YouTube videos about coronavirus D'Souza, D'Souza, Strand, Anderson, Vogt & Olatoye, (2020); Li, Bailey, Huynh & Chan (2020) had categorized the majority of the videos (60%) as useful content but some of them still consider it (9%) misleading and some considering the videos to be neither useful nor misleading (21%).

It is manifest in the literature that the propagation of misleading or nonfactual information on social media platforms could result in various kinds of negative effects. This is because some users especially the young digital natives who could be using social media as their primary source of information are therefore more likely to harbour some contrasting beliefs about the

NPIs or some conspiracy related beliefs about COVID-19. These could hinder them from practising the expected behaviour change (Allington, Duffy, Wessely, Dhavan& Rubin, 2020) which are being advocated in the NPIs.

Although social media platforms could be harnessed to support the public health response by communicating NPIs (Depoux, Martin, Karafillakis, Preet, Wilder-Smith & Larson, 2020), health officials and individuals often times utilise these platforms to educate the public as well as their fellow healthcare providers. It could be inferred that Social media is an obvious tool for this engagement and can allow experts and individuals to openly and visibly debate topics, related to the COVID-19 Pandemic.

4.0 EMPIRICAL REVIEWS

Flaxman, Mishra, Gandy, Unwin, Mellan, Coupland, Whittaker, Zhu, Berah& Eaton (2020) examined the impact of NPIs in Eleven European countries on the reproductive rate of the COVID-19 infection. They calculated backwards from observed death, the number of infections, using the estimated fatality rate of the virus and a Bayesian mechanistic model linking the infection cycle to observed deaths. Their results suggest that the implementation of NPIs allowed an 82% reduction of the virus. The authors argue that those policies have been sufficient in all Eleven countries to achieve a temporary control of the epidemic. They further calculated that across the Eleven European countries, 3.21 million deaths have been averted as a result of the NPIs.

Born, Dietrich, and Muller (2020) conducted a counterfactual lockdown scenario for Sweden applying a synthetic control group method applied to 30 countries of the European Union. They consider a lag of one month after lockdown and observed no difference in actual infection dynamics observed. They suggest that impact of lockdowns is limited due to the voluntary precautions taken by people. However, Cho (2020) with a similar approach but considering a longer lag found that lockdowns have been effective, suggesting that infection cases in Sweden would have been reduced by almost 75 percent with stricter containment.

Sulistyawati, Rokhmayanti, Budi, Siwi, Siti, Tri and Surahma (2020) did an elaborate study on the knowledge, attitude, practice and information need about COVID-19 in Indonesian society. They employed a cross-sectional study through an online survey in the third week of August 2020, using a Purposive and random sampling. People with a minimum age of 18 years and residing in Indonesia were allowed to participate in the survey conducted with an online questionnaire that spread on several platforms such as WhatsApp, Instagram and Facebook by distributing the link and continuous chain messages on that platform. Data were analysed using descriptive, chi-square and logistic regression tests. The study found that a total of 816 respondents were included in this study and that public knowledge about COVID-19 was sufficient, but some topic areas were still low. The study also found that most people had a positive attitude about the COVID-19, but they provided a negative response to government policies and that most of the community has taken preventive measures for COVID-19. While Information about how to prevent COVID-19 was the most wanted information during this pandemic, the study recommends that social media was a favourite source of information by the people.

Friedson, McNichols, Sabia, and Dave (2020) examined the impact of SIPOs in California, a State that implemented SIPO when the Coronavirus spread was still very low. They found that California's SIPO was associated with approximately 125.5 to 219.7 fewer void-19 cases per 100,000 following the policy's first three weeks of enactment. Moreover, from their results, they infer that SIPO in California led to as many as1661 fewer COVID-19 related deaths.

Sears, Villas-Boas, Villas-Boas, and Villas-Boas (2020) used data on changes in mobility patterns across the United States since the onset of COVID-19 to discuss evidence of overall reductions in daily travel. They characterize the direct impact of stay-at-home mandates on behaviour and estimated the impact of travel reductions on health outcomes. Their results reveal that the adoption of State-level stay-at-home mandates has significantly reduced the travel activity of and human encounters. In turn, they found that these reductions help flatten the curve" and reduce health consequences in early mandate States.

Using detailed daily information covering 100 countries and an event-study approach, Bardey, Fernández, and Gravel (2021) estimated the short-run effects of implementing Non-Pharmaceutical Interventions (NPIs) on the spread of the COVID-19 virus at the early stages of the pandemic. They studied the impact of two NPIs -stay-at-home requirements and workplace closures- on three outcomes: daily residential and workplace mobility; the daily growth rate of cases; and the daily growth rate of fatalities. They observe a mobility reduction in countries before they implemented NPIs but found that immediately after NPIs were implemented, mobility declined. They also observed that 25 days after the NPIs were implemented, the daily growth rate of cases and deaths was lower by 10% and 8.4% respectively. The result of their study showed 53 and 72 percent of the reduction of the daily growth rate of cases and deaths associated with a reduction of mobility being caused by NPIs.

Holly, Clare, Ikram, Kazi, Yanni, Mohammed, Alexander, Jonathan and Saiful (2020) did a conceptual review on how to improve the impact of non-pharmaceutical interventions during COVID-19 by examining the factors that influence engagement and the impact on individuals. They searched publications in English on Medline, PubMed, Scopus and Google Scholar for the period between January 1, 2000, and to March 5, 2020, using a combination of search terms including 'social or physical distancing', 'community mitigation', 'non-pharmaceutical interventions', 'community', 'general public', 'quarantine', 'social/university/childcare closure', 'hygiene' and 'pandemic or epidemic or individual disease names'. They also employed an additional hand searching of articles bibliographies. The review included quantitative (survey-based, observational studies) and qualitative (in-depth interviews, focus groups) studies which focused on the 'community in general or focused on a discrete section of the community and included studies that were undertaken in response to the emergence of infectious disease events (SARS, MERS, and 2009 H1N1/A pandemic influenza) as well as studies published on COVID-19 (as of July 2020) and hypothetical pandemics (pre 2009). The study concludes that one of the key steps in this context is to ensure that we have community participation and co-design on the development of communication messages and practical materials to support those who are imposed upon to comply with these community strategies. They seem to also suggest that relevant government bodies and institutions should regularly ensure that there is consensus among the people and stakeholders regarding all interventions, communication messages, outreach

initiatives and support documents to be received by the people who are to effectively engage in the necessary actions.

Krishna and Cho (2021) reviewed some factors Associated with the Implementation of Non-Pharmaceutical Interventions for Reducing Coronavirus Disease 2019 (COVID-19). They discovered that there has been much discussion recently about the importance of implementing non-pharmaceutical interventions (NPIs) to protect the public from coronavirus disease 2019 (COVID-19) infection and that different governments across the world have adopted NPIs (e.g., social distancing, quarantine, isolation, lockdowns, curfews, travel restrictions, closures of schools and colleges). Two fundamental strategies, namely a strict containment strategy also called suppression strategy and a mitigation strategy have been adopted in different countries, mainly to reduce the reproduction number (R0) to below one and hence to reduce case numbers to low levels or eliminate human-to-human transmission, as well as to use NPIs to interrupt transmission completely and to reduce the health impact of epidemics, respectively. The authors searched for published and unpublished studies, undertaking a systematic search of: MEDLINE, EMBASE, Allied and Complementary Medicine, COVID-19 Research, WHO database on COVID-19, and Google Scholar. Thirty-three studies were included in the study. Seven descriptive themes emerged on enablers and barriers to NPIs: the positive impact of NPIs, effective public health interventions, positive change in people's behaviour and concerns about COVID-19, the role of mass media, physical and psychological impacts, and ethnicity/age associated with COVID-19. This study highlighted that the effectiveness of NPIs in isolation is likely to be limited, therefore, a combination of multiple measures e.g., Social Distancing, isolation and quarantine, and workplace distancing appeared more effective in reducing COVID-19.

Jingcheng, Erin, Victoria and Gerald (2021) statistically evaluated Social Media Sentiment Trends towards COVID-19 Non-Pharmaceutical Interventions with Event Studies. According to them, prior work on COVID-19 NPI sentiment analysis by the epidemiological community has proceeded without a method for properly attributing sentiment changes to events, an ability to distinguish the influence of various events across time, a coherent model for predicting the public's opinion of future events of the same sort, nor even a means of conducting significance tests. They provided a case study of Twitter sentiment towards policy-level NPIs in Canada and produced results which confirm a generally positive connection between the announcements of NPIs and Twitter sentiment, and documented a promising correlation between the results of their study and a public-health survey of popular compliance with NPIs.

Maurizio, Paola, Matteo, Francesca, Ronald, Lorenzo and Paul (2021) examined how social media discourse about COVID-19 in Italy was affected by the rapid spread of the virus, and how themes in postings changed with the adoption of social distancing measures and non-pharmaceutical interventions (NPI). They used topic modeling and social network analysis to highlight critical dimensions of conversations around COVID-19: topics in social media postings about the Coronavirus; the scope and reach of social networks; and changes in social media content as the nation moved from partial to full social distancing. Twitter messages sent in Italy between February 11th and March 10th, 2020. 74,306 Tweets sent by institutions, news sources, elected officials, scientists and social media influencers. Messages were retweeted more than 1.2 million times globally. Non-parametric chi-square statistic with

residual analysis to identify categories, chi-square test for linear trend, and Social Network Graphing were used by the authors. They reported that the first phase of the pandemic was dominated by social media influencers, followed by a focus on the economic consequences of the virus and placing blame on immigrants. They also found that as the crisis deepened, science-based themes began to predominate, with a focus on reducing the spread of the virus through physical distancing and business closures. Their findings highlight the importance of messaging in social media in gaining the public's trust and engagement during a pandemic which further requires credible scientific voices to garner public support for effective mitigation.

The existing literature suggests that social media is one of the ideal means of information sharing and reception during a pandemic. However, this information is oftentimes filled with propaganda, hate and sensation by the users and further shared to either debunk or support a particular point of view. The literature had shown that the COVID-19 pandemic has resulted in an avalanche of information, much of which is false or misleading and that social media posts with misleading or dangerous opinions and analyses are often amplified by users (Topf & Williams, 2021). Therefore the social media could contribute towards shaping the information being received by others on the platforms. Part of the interest of this study is to interrogate the extent to which these situations shape the user's perception and responses to NPIs on social media platforms.

5.0 HEALTH BELIEF MODEL (HBM)

This study subscribes to the Health belief model developed in the 1950s by Hochbaum, Rosenstock and Kegels. The model attempts to explain and predict the health behaviours of individuals through examination of perceptions and attitudes, someone may have towards diseases and negative outcomes of certain actions. This model is used in health promotion to design intervention and prevention programmes. As the name implies, this theory deals with people's beliefs, suggesting that a person's belief in a personal threat of an illness or disease together with a person's belief in the effectiveness of the recommended health behaviour will predict the likelihood the person will adopt the behaviour. The HBM further posits that health-related behaviour involves a combination of factors, which include: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. According to the proponents of this theory, Perceived susceptibility explains an individual's opinion of the chances of contracting the illness condition; Perceived severity implies an individual's opinion of how serious a condition and its consequences are; Perceived benefits connotes one's belief in the efficacy of the recommended health behaviour in reducing the risk or seriousness of the condition; Perceived barriers refer to the perception of the cost associated with adhering to a recommended health behaviour if it is likely to be beneficial in reducing or eliminating the perceived threat while Self-efficacy refers to the level of confidence in one's ability to perform the health behaviour in question. This model is considered appropriate in this study to help interrogate how the beliefs on the NPIs held by the social media users about the NPI messages influence a positive behaviour change among them. This is in view of the effects of the COVID-19 Pandemic

6.0 METHODOLOGY

The study population involves active social media users in South-Eastern Nigerians. Since the active social media users do not have a definite population. The study retains the population of South East as given by the 2006 population census as follows

Table 1: Study Population

S/N	States	Population
1	Anambra	4,177,828
2	Imo	3,927,563
3	Abia	2,845,380
4	Enugu	3,267,837
5	Ebonyi	2,176,947
	TOTAL	16,395,555

Three States were selected (Anambra, Imo & Enugu) out of these Five (5) the South East States. The sample was drawn following the calculation offered by Comrey and Lee (1992), which recommends that in any given study, a sample size of 50=very poor; 100= poor; 300= good; 500= very good while 1000=excellent. In view of this recommendation, the study adopts a populations size of 500 persons considered very good for any given population. Meanwhile, the Survey and FGD are the two research methods adopted which are from both Quantitative and Qualitative research designs. The instruments for data collection are the questionnaire and the FGD Guide. However, there was a rigorous selection of respondents across stages using the multi-stage and finally at the community levels, purposive sampling of only the active social media users. These decisions are hereby illustrated.

Table 2: Sampling of the Social Media users in South East for the Survey

Senatorial Zones	Local government Areas	Communities	No of Respondents	Type of community	Total
Enugu West	Awgu	Ihe	56	Urban	166
Enugu East	Nkanu West	Ozara	55	Rural	
Enugu North	Nsukka	AchallaNsukka	55	Urban	
Orlu	Njaba	Umuaka	56	Rural	167
Owerri	Owerri Municipal	Owerri	56	Urban	
Okigwe	Okigwe North	Ihube	55	Rural	
Anambra Central	Awka South	Awka	56	Urban	167
Anambra North	Ayamelum	Umuelum	55	Rural	
Anambra South	Nnewi North	Nnewi	56	Urban	
		Total	**500**		**500**

The selection recognized the senatorial zones, some local government Areas and cities or Towns in these selected states, where there could be more representation of the active social media users. For the FGD, the study selected only a few active social media users whereby the selected states had Four (4) participants each. The arrangement was such that only active

social media users from any community rated as an urban area were used in each of the States. This can be illustrated underneath:

Table 3: Purposive Selection of Active Social Media Users for the FGD

S/N	State	Selected Urban Area	FGD participants
1	Anambra	Awka	4
2	Enugu	Nsukka	4
3	Imo	Owerri	4
	Total		12 Participants

7.0 RESULTS

Table 4: How social Media Users perceive COVID-19 NPI Messages on the platforms

The social media brings the COVID1-19 NPIs closer to us		There are some contrasting details on the social media about NPI Messages		Those contrasting messages affect the way I perceive these NPI Messages		I usually confirm the sources of any information received about COVID-19 on the platforms		I perceive the COVID-19 NPI messages on the social media to be attracting sentiments		I perceive the COVID-19 NPI messages on the social media to be attracting the spread ofunverified information	
Yes 100% (N=500)	No 0% (N=0)	Yes 100% (N=500)	No 0% (N=0)	Yes 6% (N=29)	No 94% (N=471)	Yes 15% (N=73)	No 85% (N=427)	Yes 100% (N=500)	No 0% (N=0)	Yes 100% (N=500)	No 0% (N=0)
Total 100% (N=500)		**100% (N=500)**		**100% (N=500)**		**100% (N=500)**		**100% (N=500)**		**100% (N=500)**	

This table presents data on ways social media users perceive the COVID-19 NPI messages on the platforms. These respondents generally perceive the COVID-19 NPI messages on social media to be attracting sentiments and spread of unverified information. They further perceived the social media to be providing them various communication content on COVID-19 NPI messages including the contrasting ones (100%). These contradictions very hardly or less frequently affect the ways users perceive the NPI messages on the Platforms (6%). This could be a result of their exposure to other media content conveying the NPIs. However, even though only a few percentages of the respondents attempt to verify the information they receive from these platforms, the majority who do not take such action (85%) could probably have pre-existing knowledge about the nature of social media. The following excerpts were obtained from the FGD sessions with respect to the perception of these people.

Participant 4 (Anambra): I obtain information from social media much more than other media platforms but I understand the social media posts to be exaggerating, and sometimes false and misleading

Participant 2 (Imo): even though I am not bothered much about checking the NPI messages, I try as much as I can to find out from my close environment what the situation is and not merely believing whatsoever I read on social media about the NPIs.

Participant 3 (Enugu): I consider social media as a very prominent media which makes information sharing very easy and spontaneous even though the NPIs are not much of attention to the news these days because most people are already aware of the virus and almost getting tired of the messages.

These show the activeness and user observance among the respondents regarding the NPI messages on social media platforms. The information shows that users do not entirely rely on social media for information on NPI although they consider it very spontaneous and a more convenient means of information sharing. However, few of the respondents attempt as much to confirm such from the environment, the existing situational changes and not accepting all contents received on the platforms. These show that they are active and therefore do not accept all the messages from the social media assent.

Table 5: Responses toCOVID-19 NPI Messages on the Social Media

S/N	Variables	How frequent do you wear face Mask?	How frequent do you sanitize your hands?	How frequent do you wash your hands with soap?	How frequent do you cough into your elbow?	How frequent do you observe social distancing?
1	Regularly	23% (N=117)	40% (N=198)	44% (N=219)	5% (N=23)	21% (N=104)
2	Occasionally	77% (N=383)	60% (N=302)	56% (N=281)	40% (N=201)	79% (N=396)
3	Not at all	0	0	0	55% (N=276)	0
	Total	100% (N=500)	100% (N=500)	100% (N=500)	100% (N=500)	100% (N=500)

This table shows the frequency with which these respondents respond to the various COVID-19 NPIs on social media. It was found that the majority of them occasionally wear face masks nowadays (77%) while few of them do so regularly (23%). Also, the majority of them occasionally sanitize their hands (60%), while only slightly above one third of them still practise regular hand sanitizing (40%). However, similar results were obtained on the handwashing by the respondents where more than half of them (56%) occasionally practice handwashing where only above one third of them (44&) practice regular hand washing. Also, the majority of these respondents occasionally maintain physical distancing (79%), while only about one-fifth of them maintain regular social distancing. Responses from the FGD is also presented as follows:

Participant 4 (Imo): I usually pay attention to NPI messages on social media but I have always been receiving information from other sources too. I am not influenced by them. Instead, I try to confirm the messages as much as I can

Participant 1 (Enugu): There is no need to confirm them again because some of the messages have already been very pronounced on various media and are even being practised by people.

Participant 3 (Imo): I do not practice some of the NPIs because it makes me very uncomforted, especially the use of facemasks unless I am forced to use it in some places such as Banks, and corporate offices

Participant 2 (Anambra): I now relax on some of the platforms because the NPIs is not being enforced in most places.

Participant 4 (Imo): As much as I can, I try to pay attention to NPIs but it is not because they are presented on social media. Even such information on social media is not as new that may capture my attention but if there are issues or cases referenced, I may pay attention to it.

These respondents activeness was further reinforced in these excerpts as they more specifically recognize the platforms to be relatively widespread on various other platforms and therefore do not capture their interests, unless when new cases, incidents or discoveries are raised. Some of them also expressed the discomfort they encounter with the use of facemasks and that some of the times, they attempt to more religiously confirm the authenticity or otherwise of the messages received on the platforms regarding the NPIs.

Table 6: How the social media platforms fuel controversies among the users regarding the COVID-19 NPI messages

S/N	Variables	Social media presents contrasting information on the NPIs	Social media make me harbour some doubts about the existence of COVID-19	Social media make me doubt some of the NPIs	I do not practice the NPI because of social media
1	Yes	100% (N=500)	39% (N=196)	2% (N=12)	0
2	No	0	61% (N=304)	98% (N=488)	100% (N=500)
	Total	100% (N=500)	100% (N=500)	100% (N=500)	100% (N=500)

This table shows the entire respondents' affirmation that social media platforms provide contrasting information on the COVID-19 pandemic and the NPI messages and that these platforms do not lead to respondents' non-practice of these intervention messages. This could account for the fact that they have been receiving such messages from other kinds of media. Instead, a few of them (39%) admit harbouring some doubts about the existence of COVID-19 (39%) but the majority of them do not harbour such doubts (61%). However, a few of

them (2%) had admitted that social media platforms make them doubt the efficacy of some of the NPIs while the majority of them (98%) consider them to be efficient. These few could be part of those who still doubt the existence of COVID-19. The result of the FGD is also presented hereunder:

Participant 1 (Imo): Sometimes the messages being received on social media makes me doubt the existence of COVID-19 in Nigeria. For instance, there were claims by some authorities that went viral on social media, saying that 5G wireless technology crated the novel COVID-19 especially on WhatsApp, Facebook, Twitter and Instagram. This claim was later dismissed by some experts on grounds that 5G cannot cause viral infections and that even though there are health concerns regarding the use of 5G networks and mobile networks in general, owing to radiation, such has nothing to do with the outbreak of the virus because the virus cannot be created by radiation. These helped to cause more confusion to many.

Participant 1 (Anambra): I have many social media accounts but basically I hardly check such information even though they usually come but because I receive several messages, I try to limit myself to the messages I can read at a time which they consider very important to them

Participant 3 (Enugu): Sometimes people's views on social media platforms affect the way I perceive the NPIs. For instance, I have gotten multiple contrasting information about the recently introduced Vaccine which up till today had remained a controversial area for research.

These respondents further attest to information overload on social media which is captured within the context of 'infodemic' in the existing literature. As a result of this overload, users seem to religiously access and filter the basic information they consider important to them which gives strength to the idea of selective exposure. However, the respondents further acknowledge the recently introduced COVID-19 vaccination as the most volatile in fuelling controversies as against the NPIs which oftentimes they do not pay much attention but consider to have been in existence over time.

8.0 DISCUSSION OF FINDINGS

The respondents generally perceive the COVID-19 NPI messages on social media to be attracting sentiments and spread of unverified information. They further perceived the social media to be providing them various communication content on COVID-19 NPI messages including the contrasting ones (100%). These contradictions very hardly or less frequently affect the ways users perceive the NPI messages on the Platforms (6%). This could be a result of their exposure to other media contents conveying the NPIs. Although only a few percentages of the respondents attempt to verify the information they receive from these platforms, the majority do not make such verifications (85%).

Results of the FGD also showed the activeness and observance among the respondents regarding the NPI messages on social media platforms. The result shows that users do not rely on social media for information on NPI although they consider it very spontaneous and a more convenient means of information sharing. However, few of the respondents attempt as

much to confirm such from the environment, the existing situational changes rather than accepting all contents received from the platforms.

The study also found that these respondents respond to the various COVID-19 NPIs on social media. It was found that the majority of them occasionally wear face masks nowadays (77%) while few of them do so regularly (23%). Also, the majority of these respondents occasionally sanitize their hands (60%), while only slightly above one third of them still practise regular hand sanitizing (40%). However, similar results were obtained on handwashing where more than half of them (56%) occasionally engage in the practice while only above one third of them (44&) practice it regularly. Also, the majority of these respondents occasionally maintain physical distancing (79%), while only about one-fifth of them maintain regular social distancing.

The FGD further shows a reinforcement on the respondents' activeness as they recognize the NPI messages have been widespread on various other platforms and therefore do not capture their interests, except when further cases, incidents or discoveries are raised. Some had expressed the discomfort they encounter with the use of facemasks and that some of the times, they attempt confirming the authenticity or otherwise of some messages received on the platforms regarding the NPIs.

The study also showed the entire respondents' affirmation that social media platforms provide contrasting information on the COVID-19 pandemic and the NPI but these platforms do not lead to their non-compliance with the intervention messages. This could account for the fact that they have been receiving such messages from other kinds of media. Instead, few of them (39%) admit harbouring some doubts about the existence of COVID-19 (39%) but the majority of them do not harbour such doubts (61%). However, a few of them (2%) had admitted that social media make them doubt the efficacy of some of the NPIs while the majority of them (98%) consider them to be efficient. These few could be part of those who still doubt the existence of COVID-19.

The FGD further showed that the respondents attest to information overload on the social media which was captured within the context of 'infodemic' in the existing literature (Tangcharoensathien, Calleja, Nguyen, Purnat, D'Agostino, Garcia-Saiso, et al, 2020; WHO, 2020). As a result of this overload, users seem to religiously access and filter the basic information they consider important to them. However, the respondents further acknowledge the recently introduced covid-19 vaccination as the most volatile in fuelling controversies as against the NPI messages which oftentimes do not attract their attention because they have been existing in numerous media genres over time.

9.0 CONCLUSION

This work concludes that social media is among the fastest means of spreading information during a pandemic and that users of these platforms in South Eastern Nigeria are quite knowledgeable about the NPIs, practice them less frequently but hardly rely on them for obtaining such information.

The study further concludes that NPIs are widespread in various media including social media where they are amplified or exaggerated.

10.0 RECOMMENDATIONS

The platforms should effectively be used by physicians to propagate the NPIs more spontaneously to promote compliance in view of the sporadic misinformation that could be found spreading on the platforms.

This aligns with the observations of Brynielsson, Granåsen, Lindquist, NarganesQuijano, Nilsson &Trnka, (2018) that within the field of crisis communication, social media possibilities such as online sharing and social networking have had an impact on the way crisis information is disseminated and updated.

The study further recommends that studies on the use of social media be made compulsory as part of General studies in all institutions of higher learning. This will help young digital natives to be properly guided in their use of the platforms.

It is also recommended that responses and compliance to social media messages on a pandemic and general health issues should be taken seriously especially when they originate from professional health experts.

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