

Adherence to COVID-19 pandemic prescribed recommendations, source of information and lockdown psychological impact of Nigeria social media users.

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Keywords: COVID-19, Recommendations, Psychological effect, Lockdown, Nigeria

Abstract

Background: COVID-19 is a highly infectious viral disease that has spread to over one hundred and eight countries, including Nigeria. Countries across the globe have been implementing preventive measures towards curbing the spread and impact of the virus. Thus, the present study was aimed at assessing compliance to prescribe preventive recommendations, the psychological effect of lockdown, and the source of information among Nigeria social media users.

Methods: This research implemented an online cross-sectional survey using an unidentified online Google based questionnaire to elicit required information from potential respondents via social media channels such as WhatsApp, Twitter, Instagram, Telegram and Facebook. On these forums, an external link with google based questionnaire was shared with Nigerians social media users to participate from 1st to 31st April 2020 and we had 1,131 respondents who participated in the survey.

Results: Age and respondents' scientific or non-scientific backgrounds were the socio-demographic variables associated with respondents having psychological challenges as $P < 0.05$. However, none of the socio-demographic variables of the respondents were associated with compliance with the recommendations as $P > 0.05$. Also, most (63.4%) of the respondents were stressed by the feelings associated with the COVID-19 pandemic, as the expected majority (80.1%) sources information about the epidemics through social media platforms.

Conclusion: Given numerous uncertainties surrounding the global COVID-19 pandemics, there is a need to continuously increase awareness through various media and ensure that people are highly complying with the preventive measures being put in place by relevant authorities. Also, palliative measures should be put in place to reduce the psychological impact of the pandemic.

Keywords: *COVID-19, Compliance, Recommendation, Psychological effect, Lockdown, Nigeria*

Introduction

1.1. Background

The 2019/2020 coronavirus, also known as COVID-19, is an ongoing pandemic. The virus, a viral infectious disease caused by severe acute respiratory syndrome¹ as now spread across the world, and almost all the countries are battling with the virus^{2,3}. Governments and medical officials are also trying their best to curb the spread as much as possible⁴.

The virus is transmitted by aerosols that could remain suspended in the air for many minutes after coughing or sneezing or via close personal contact, such as by touching or shaking hands with an infected person. These viruses may also spread when people touch contaminated objects or surfaces and then their mouth, nose, or eyes. Moreover, it can remain viable for a few days on multiple surfaces^{5,6}. People with comorbidities and males older than 60 years are assumed to be at the risk of the virus⁷. However, all population is at the risk of COVID-19 irrespective of their demographic composition.

The epidemic has been declared by the World Health Organization (WHO) as a public health emergency of international concern on 31st January 2020, and on 11th March of the same year, WHO declared the outbreak a pandemic^{4,8}. As of 2nd May 2020, over 3.3 million cases and 330,000 deaths have been reported in all the continents⁹, and these cases are still growing.

Gilbert and colleagues' modelling study of the risk of COVID-19 importation from China indicates that the ability of African countries to manage the local transmission of the virus after importation hinges on implementing stringent measures of detection, prevention, and control¹⁰. The country with the second-highest import risk ranking was Nigeria, with moderate capacity but high vulnerability and potentially significantly larger populations that are exposed to inefficacy health systems³.

However, Nigeria demonstrated its ability through intensifying its preparedness against COVID-19 importation, drawing on recent successes in controlling polio and Ebola epidemics¹⁰. The first reported case of the novel virus was imported into Nigeria in February 2020 by an Italian citizen.¹⁰ The number which currently stood at 2170 reported cases and 68 deaths⁹. Without a vaccine in hand, it seems that the virus can only be slowed by extreme behavioral change and societal coordination².

Preventative measures implemented by national, state, and local governments worldwide now affect the daily routines of millions of people worldwide, and the rule includes social distancing and non-

movement between and within countries¹¹⁻¹³. These changes are essential to beat coronavirus and protect health systems¹⁴. Existing research has demonstrated that the current most effective and efficient public health interventions are only feasible when the public duly accept them¹⁵. However, preliminary reports show vast differences in people's willingness to practice measures that can reduce pathogen transmission^{2, 16}.

A study in Italy concluded that most demographic groups believed and followed health measures¹⁷; also, a sentiment study conducted in India on lockdown showed that the embossed sentiment was positive. Even though there were negativity, fear, disgust, and sadness about the lockdown⁴. Due to the high cost of complete isolation and healthcare, compliance with recommendations to strategically reduce contact is likely to be higher¹⁵.

The COVID-19 pandemic is a global health emergency that could potentially have a severe impact on public health. Lockdown measures included travel restrictions, the mandatory closure of schools, non-essential commercial activities, and industries. People were asked to stay at home and socially isolate themselves to prevent being infected¹⁸. These measures are necessary to fight the novel coronavirus disease. Although effective in preventing the uncontrolled spreading of COVID-19, these measures can negatively affect mental health¹⁹, and relaxation will almost certainly trigger a further epidemic wave of deaths²⁰.

Social separation or quarantine of non-infected persons for an extended period may have adverse effects, such as loneliness, a rise in fear and anxiety and also, mental health consequences^{12-16, 21}. Studies in the past related to another family of coronavirus have also been linked to anxiety, depression, and psychological challenges as an aftermath effect of previous outbreaks²². Fear of the unknown raises anxiety levels in healthy individuals as well as those with pre-existing mental health conditions²³.

There has been a global rise recently in the spread of misinformation that has plagued the scientific community and the public. The public health crisis emerging due to the coronavirus (COVID-19) is also now beginning to feel the effects of misinformation²⁴.

In our current digital world, online platforms are perhaps the most accessible source of health-related information for the public²⁵. As more and more social interactions move online, the conversation around COVID-19 has continued to expand, with growing numbers turning to social media for both information

and company¹¹. Twitter and other social media platforms are essential sources of breaking news around the globe. It can also be a crucial vehicle in disseminating new public health information²⁶.

The current novel coronavirus outbreak has spread around the world as such strategic dissemination of accurate and efficient public health messages by the Government and Centre for Disease Control (CDC) through the internet or television is strong potential to alleviate unnecessary fear^{2, 5, 27}.

Limited studies have been able to link how compliance with the prescribed recommendation, source of information, and lock psychological impact can either inflate or deflate the propagation of COVID-19. Thus, this study examined the compliance level to COVID-19 prescribed recommendations, the psychological implications of lockdown, and the source of information on COVID-19 among Nigeria social media users.

1.2. Objective

The main objective of this study was to examine adherence to prescribed recommendations, lockdown psychological impact & source of information among Nigeria social media users.

Method & Materials

2.1. Participant settings

This cross-sectional survey used a Google-based, anonymous online questionnaire to gather data from respondents via social media platforms such as Telegram, Instagram, Facebook, WhatsApp, and Twitter. On these platforms, the google based questionnaire was shared among Nigeria social media users to participate. A snowball sampling technique was adopted to involve more Nigerians who are social media users and are residing in Nigeria during the COVID-19 pandemic by telling those who were first sent the external google based questionnaire link to kindly share with their contacts. This unidentified online survey was conducted for one month within Nigeria social media users from 1 April to 31st May 2020, and we had 1,131 who participated in the online survey.

2.2. Procedure

Due to the social distancing rules imposed by the Nigerian Government and the enforcement of curfew/lockdown, physical interaction was not feasible, so the study survey was promoted online via social media, and existing study participants were encouraged to share the online google based

questionnaire with potential respondents. Participation was completely consensual, voluntary and anonymous. All respondents were given informed consent by asking if they were interested in participating the online google based questionnaire for this study, and those who showed that they are not interested in participating were signed-out from completing the next phase of the online google based questionnaire and those who agreed to continue the move to the next phase involving the completion of the online google based questionnaire.

2.3. Instruments

The online google based questionnaire elicited socio-demographic variables such as gender, age, educational attainment, professional history of the respondents, while dependent variables such as compliance to prescribed recommendations, the psychological impact of lockdown, and source of information during the lockdown among Nigeria social media users.

2.4. variables Definition

This section of the study summarizes the variables used in the study. Respondent age, gender or sex of the respondents, educational level, and professional background variables were used as explanatory variables. The dependent variables were recommendation compliance, feeling regarding COVID-19 pandemic, and respondents' adaptation. Recommendation compliance refers to whether respondents comply with the country's ministry of health recommendations.

Feeling regarding the COVID-19 pandemic refers to the respondent's feelings concerning stress. Respondents were asked about their opinions regarding the COVID-19 epidemic; those that reported nervous/anxious, fear, angry, lonely, and bored were coded stressed while those that said just fine, happy, and relaxed/optimistic were coded not stressed.

Respondent's adaptation refers to coping strategies used by respondents. Respondents were coded adapting well if respondents engaged in positive activities like watching television, reading books/magazines, volunteering, work from home, etc. while respondent was coded not adapting well if they engaged in harmful activities like fighting with everyone, talking to themselves, having problem sleeping, etc.

2.5. Statistical Analysis

Using Stata 14 tools, the data collected from the Nigeria social media were analysed. The findings were described in table and figure formats, using frequencies and percentages to explain specific variables of the sample population. Further, chi-square analysis was conducted to predict the influence of socio-demographic factors with the outcome variables. Results with a p-value < 0.05 were significant predictors in the bi-variate analysis.

2.6. Ethical Consideration

The study was approved by the Ethics Committee of Obafemi Awolowo University, Nigeria. Participants' permission was sought before filling out the online google based questionnaire. Those who refused were not permitted to participate. All those who agreed to participate in the survey were granted access.

Results

Respondents' socio-demographic characteristics

Table 1 is a socio-demographic sample of respondents. The table revealed that more than 77 percent of respondents were between the ages of 18 to 39, while the remainder were between the ages of 40 and above. Sex reveals 42.1% were male, and 57.9% were female. The table shows that respondents who were well educated were 52%, this means 5 out of every 10 (52.0%) had a bachelor's degree, 28.7% had a master's degree, 8.6% had a Ph.D., 5.4% had a high school certificate and only 0.3% had no formal education.

Table 1: Respondents' socio-demographic characteristics

Variable	N=1131	%
Sex		
Male	474	42.1
Female	652	57.9
Educational level		
No formal education	3	0.3
High school	61	5.4
College (Bachelor)	589	52.0
Master	325	28.7
PhD	97	8.6

Other	56	5.0
Age range		
18-29	495	43.8
30-39	383	33.8
60-69	16	1.4
>70	2	0.2
Professional Background		
Non-scientific/non-medical	438	38.7
Scientific/medical	693	61.3

Prescribed recommendation compliance

Table 2 presents the respondents' compliance with prescribed recommendations. The table shows that 9 out of every respondent reported that they follow the country ministry of health recommendations. When asked about the extent they follow the recommendations, 4 out of every ten reported that they follow all the recommendations. Respondents were asked how frequently they touch their face, only 3.8% reported that they never touch their face, 34.3% rarely touch their face, 34.7% touches their face sometimes, 21.2% touches their face often, and only 6% touch their face always.

Table 2: Prescribed recommendation compliance

Variable	N=1131	%
Do you follow the recommendation of your health ministry/government		
No	11	1.0
Yes	1120	99.0
To which extent do you follow them		
Not at all	4	0.3
I follow some but not all	150	13.3
I follow most of them	520	46.0
I follow all the recommendations	457	40.4
How frequently do you touch your face		
Never	43	3.8
Rarely	388	34.3
Sometimes	392	34.7
Often	240	21.2
Always	68	6.0

Lockdown psychological effects & Source of Information

Table 3 presents the respondents' psychological effects and coping strategies & source of information. Six out of every ten respondents reported that they were stressed, and about four reported that they were not stressed. Concerning coping and adaptation during the lockdown, 83.7% reported that they are adapting well by watching TV/movies, spending time with family, reading books/magazines, and working from home.

Source of information about the COVID-19 pandemic revealed that 8 out of every ten respondents heard the information from social media (Facebook, Instagram, WhatsApp profile, etc.) while the remaining heard from TV (14.1%), friends/family (2.4), newspaper (2.0%) and other sources (1.4%).

Table 3: Lockdown psychological effects & Source of Information

Variable	N=1131	%
Feeling regarding COVID-19 Pandemic		
Stressed	717	63.4
Not stressed	414	36.6
How are you adapting		
Adapting well	947	83.7
Not adapting well	184	16.3
Source of Information		
Social media	906	80.1
Television	159	14.1
Friends/Family	27	2.4
Newspaper	23	2.0
Other sources	16	1.4

Socio-demographic and recommendation compliance

Table 4 below presents the recommendation compliance and respondent socio-demographics. The table reveals that as age increase, the number of respondent compliance to recommendation also increase. Still, there is no significant relationship between the age of respondents and compliance with the

recommendation. Concerning gender, level of education, and respondent background, the table shows that none of these were significantly related to recommendation compliance.

Table 4: Association between socio-demographic and recommendation compliance

Variables	Recommendation compliance		
	No	Yes	χ^2 , p-value
Age group			
18-29	4 (0.8)	491 (99.2)	
30-39	2 (0.5)	381 (99.5)	
40-49	4 (2.3)	168 (97.7)	
50-59	0 (0.0)	63 (100.0)	
60-69	1 (6.3)	15 (93.7)	
>70	0 (0.0)	2 (100.0)	9.48, 0.091
Gender			
Male	4 (0.8)	470 (99.2)	
Female	7 (1.1)	645 (98.9)	0.15, 0.699
Level of education			
No education	0 (0.0)	3 (100.0)	
High school	0 (0.0)	61 (100.0)	
Higher education	9 (1.5)	580 (98.5)	
Post-graduate	2 (0.4)	476 (99.6)	4.04, 0.257
Background			
Non-scientific/non-medical	5 (1.1)	433 (98.9)	
Scientific/medical	6 (0.9)	687 (99.1)	0.21, 0.645

Socio-demographic and Feeling regarding COVID-19 Pandemic

Table 5 describes the connection between respondents' socio-demographic variables and feelings of the respondent during the COVID-19 pandemic. The table showed the respondents' age was significantly associated with a feeling regarding the COVID-19 epidemic. Respondents in 18-29, 30-39, 40-49, and 50-59 age categories were reported stressed during the COVID-19 pandemic. More than half of respondents with high school, higher education, and postgraduate category of the level of education feel stressed during the COVID-19 pandemic, but this is not statistically significant in this study. Gender and background of the respondent also show no statistically significant

Table 5: Association between socio-demographic and Feeling regarding COVID-19 pandemic

Variables	Feeling regarding COVID-19 Pandemic		
Age group	Stressed	Not stressed	χ ² , p-value
18-29	326 (65.9)	169 (34.1)	12.08, 0.034*
30-39	239 (62.4)	144 (37.6)	
40-49	106 (61.6)	66 (38.4)	
50-59	41 (65.1)	22 (34.9)	
60-69	4 (25.0)	12 (75.0)	
>70	1 (50.0)	1 (50.0)	
Gender			
Male	307 (64.8)	167 (35.2)	0.49, 0.483
Female	409 (62.7)	243 (37.3)	
Level of education			
No education	1 (33.3)	2 (66.7)	2.27, 0.519
High school	35 (57.4)	26 (42.6)	
Higher education	374 (63.5)	215 (36.5)	
Post-graduate	307 (64.2)	171 (35.8)	
Background			
Non-scientific/non-medical	290 (66.2)	148 (33.8)	2.44, 0.118
Scientific/medical	427 (61.6)	266 (38.4)	

Socio-demographic and respondents' adaptation

Table 6 presents the respondent's socio-demographic and adaptation during the pandemic. The table shows that about 8 out of every ten respondents in 18-29, 30-39, 40-49, and 50-59 age group categories well adapting compared to about 6 out of every 10 in the age group 60-69, but this is not statistically significant in this study. Gender and level of education were not statistically significant. Still, the table revealed that about 8 out of every ten respondents with high school, higher education, and postgraduate in the level of education categories reported that they were adapting well. The background of the respondent shows a statistically significant relationship in that more of the respondents with a scientific/medical background were adapting well.

Table 6: Association between socio-demographic and respondents' adaptation

Variables	Respondents' adaptation		
Age group	Adapting well	Not adapting well	χ^2 , p-value
18-29	414 (83.6)	81 (16.4)	
30-39	325 (84.9)	58 (15.1)	
40-49	142 (82.6)	30 (17.4)	
50-59	55 (87.3)	8 (12.7)	
60-69	9 (56.3)	7 (43.7)	
>70	2 (100.0)	0 (0.0)	10.38, 0.065
Gender			
Male	405 (85.4)	69 (14.6)	
Female	538 (82.5)	114 (17.5)	1.73, 0.189
Level of education			
No education	1 (33.3)	2 (66.7)	
High school	53 (86.9)	8 (13.1)	
Higher education	494 (83.9)	95 (16.1)	
Post-graduate	399 (83.5)	79 (16.5)	6.07, 0.108
Background			
Non-scientific/non-medical	346 (79.0)	92 (21.0)	
Scientific/medical	601 (86.7)	92 (13.3)	11.77, 0.001**

Discussion

The study was carried out to examine how people in Nigeria are complying with recommendations from the country's health authority, lockdown psychological impact, and source of information among social media users in Nigeria. As the world faces the coronavirus threat (COVID-19), many commentators and national leaders around the world are beginning to recognize this as a genuine threat

to national security. However, in terms of human behaviour, the danger does not come from an external adversary but from people who refused to comply with rules and orders and fail to adjust their actions to respond to the changing situation. The person who fails to comply with the coronavirus is an active and ongoing threat to others as well as or sometimes more than to themselves. Compliance with guidance and prescribed protocol is a common and well-established medical issue. People do not routinely do what's right for them and refuse to stop behavior that's bad for them. This same behavior pattern was expected in respect of COVID-19 restrictions in Nigeria. Finding from this study shows that almost all the respondents adhere to the recommendation and guidelines and compliance with the recommendation was not associated with respondent's socio-demographic explore in this study.

It is crucial to know how people are adapting to their various environments in this strange period. Findings show that respondents who are young and active were adjusting well. This may be because they have the energy to engage in different activities. Also, young people are the best with technology, with the internet they can relate with their friends in any part of the world. Concerning education, the study shows that more educated persons were adapting well. This is because they are more knowledgeable and can easily understand the situation compared to those with no formal education. The respondent background was not another variable explore on adaptation in this study. The finding shows that respondents with science/medical background are more likely to adapt well because of their awareness of preventive measures, treatment of diseases, and they can administer and recommend drugs.

The study also assesses the psychological impact of lockdown on respondents concerning whether they are stressed or not. The finding shows about 63% reported that they are confirmed, which is more common among respondents within the age group of 18-29, 30-39, 40-49, and 50-59 years. This may be because most of them are breadwinner/head of their family that needs to cater to many things for the household. Also, this is the active/working-age group in which many of their activities have been affected by the lockdown.

Source of information is another crucial variable to look at during this period because it is critical to know the medium to use when there is a need to disseminate information in terms of reach out. Finding from this study shows that the majority get updates about COVID-19 from social media.

Declarations

Conflict of interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: No

Ethical approval: Participants' permission was sought before filling out the online google based questionnaire. Those who refused were not permitted to participate. All those who agreed to participate in the survey were granted access.

Guarantor: OAB

Contributorship: OAB was the principal investigator of the study, research the literature and drafted methodology. OO analysed the collected data and wrote the discussion. TB was involved with designing the questionnaire, writing of abstract and general editing and proofreading.

Acknowledgments: None

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