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Original Research Article

Preventive health practices and the mass media in view of the COVID-19 pandemic

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ABSTRACT

Background: The COVID-19 pandemic is a highly infectious disease caused by a novel corona virus. Preventive strategies are vital in controlling its spread and the mass media play a central role in disseminating needed information to the public. This study was carried out to determine how mass media has impacted on the health behaviour of individuals globally in view of the COVID-19 pandemic.
Methods: This was a cross-sectional study targeting individuals in all inhabited continents of the world using an online anonymous pre-tested self-administered questionnaire.
Results: The data of 485 respondents were analysed. Respondents who had heard of COVID-19 were 98.4% (477) and those who knew it was a disease caused by a new corona virus were 92.4% (448); 81.9% (397) believed COVID-19 had no cure. Information on COVID-19 was from the mass media 77.5% (376); 52.8% (256) was from the internet while 23.5% (114) was from the television. All information on COVID-19 were thought to be authentic and believable 58.8% of the time (285). Respondents would always use a face mask when away from home 47.8% (232), maintain at least an arm length from others in public 32.4% (157), wash their hands with soap and water 58.6% (284) or use an alcohol based hand-sanitizer 45.2% (219). Source of information was significantly associated with knowledge on COVID-19 (p=0.002).
Conclusions: Preventive practices to militate against the spread of COVID-19 are suboptimal in view of the spread and severity of this pandemic. Most information on COVID-19 were obtained from mass media. The mass media can therefore be actively and better mobilized as means of disseminating vital information on COVID-19.

Keywords: Covid-19, Information, Media, World

INTRODUCTION

The corona virus disease of 2019 (COVID-19) is a highly contagious disease caused by a novel corona virus. This virus is mainly transmitted through droplets generated when an infected person coughs, sneezes or exhales. Infection can occur by breathing in the virus or being in close contact with a person infected with COVID-19. The droplets released while coughing, sneezing or exhalation are heavy and fall on floors and surfaces. Consequently, one can become infected by touching contaminated surfaces and then touching one's eyes, nose and throat.[1]

Due to the highly infectious nature of this virus, it has been advocated and enforced by various governments in different countries for citizens to stay home.[2] Information on this virus has been elusive and is still evolving. There are still a lot of grey areas and a wide knowledge gap.

The mass media is communication that reaches a large audience. It could be written, broadcast or spoken. It includes television, radio, adverts, movies, internet, social media, magazines, newspapers and others. Mass media is a powerful and significant force in modern culture.[3]

The mass media of today has become a powerful industry especially in developed countries.[4] Two theories have been propounded to explain the media's influence on people's behaviour. One states that the mass media's can change beliefs by providing relevant information. The second states that influence on behaviour occurs through persuasion independent of people's information.[5] Mass media is able to create currents, modify opinions, destroy personalities, promote or demote models with or without intention.[6] As such, effect of mass media on the consumer can be quite overwhelming.[6]

Products available in the media, for example news, are largely influenced by subjects operating in the media market.[7] In order words, the most topical and sensational issues will most likely be featured by mass media. Other influences on media products include censorship, government regulations and ethical requirements.[7] In Nigeria and Africa as a whole, the influence of mass media is growing profoundly especially in the 21st century.[8-11]

A number of research have been carried out on COVID-19 in recent times.[12-17] Some research report poor adherence to laid down preventive strategies as speculations abound on what the cure for Covid-19 is.[15,18-20] In view of the progression of the COVID-19 pandemic, it becomes pertinent to search out how the media has influenced people's beliefs and health practices. This is vital as information on this pandemic continues to filter out. This research aims to determine how mass media has impacted on the health behaviour of individuals globally-both in Nigeria as well as other countries. Findings will shed light on how to employ the mass media in future events of national and international security.

METHODS

According to the 2020 data, the world population is currently 7.8 billion while Nigerian population is 206 million.[21] There are 7 continents globally- Asia, Antarctica, Africa, North America, South America, Europe, Australia.[22] Nigeria is located in West Africa, having 36 states and 6 geopolitical zones.[23]

This was a cross sectional study targeting individuals in all inhabited continents of the world. All individuals who were 18 years and above who gave consent to participate in this research were recruited into the research online.

Factoring in a world population of 7.8 billion, 95% confidence level and confidence interval of 5%, a minimum sample size of 384 was arrived at using an online sample size calculator.[24] Assuming a non-response of 20%.[25,26]

$$\text{Adjusted sample size (f)} = \frac{n}{1-f}$$

$$= \frac{384}{1-0.2} = \frac{384}{0.8} = 480$$

An online anonymous pre-tested self-administered questionnaire created with Google tools was used for data collection.[27] Data was consecutively acquired from May to October 2020 until sample size was reached. The online questionnaire was distributed on the internet and uploaded to as many social media outlets as assessable. Research contacts in the various continents assisted in distribution of the questionnaire.

Data collected was analysed using the Statistical Package for the Social Sciences version 2021 (SPSS 21). Categorical variables were described with percentages and pictorial representation. Associations were tested for using Chi-square analysis for association. Numerical variables were described using means and standard deviation. A p value of <0.05 was considered to be significant.

RESULTS

The data of four hundred and eighty-five (n=485) respondents were analysed. The result of the analysis is detailed below.

Majority of the respondents (n=218, 44.9%) were aged 30 to 39 years while male:female ratio = 1:1.6. Respondents that were married constituted 65.6% (n=318) and those from the African continent contributed 89.1% (n=432). Respondents that worked in the health sector and had completed tertiary education were 48.7% (236) respectively (Table 1).

Most respondents (98.4%, 477) had heard of COVID-19 and knew it was a disease caused by a new corona virus (92.4%, 448). 397 (81.9%) believed COVID-19 had no cure. The internet was the source of the respondents' information 52.8% of the time (256) while 23.5% (114) got their information from the television. The information was thought to be authentic and believable 58.8% (285). In summary, the information on COVID-19 was from the mass media 77.5% (376) and 22.5% (109) from other sources (Table 2).

Respondents that believed COVID-19 was real were 94.6% (459). Most 89.3% (433) had never been infected with COVID-19 nor had people close to them who had been infected with this virus (88.5%, 429). Respondents would always use a face mask when away from home (47.8%, 232), maintain at least an arm length from others in public (32.4%, 157) and wash their hands with soap and water as much as possible (58.6%, 284) (Table 3).

Table 1: Socio-demographic profile of the study participants.

Parameter	Frequency	Percentage
Age group (in years)		
Less than 20	9	1.9
20 to 39	109	22.5
30 to 39	218	44.9
40 to 49	83	17.1
50 to 59	36	7.4
60 and above	30	6.2
Gender		
Male	186	38.4
Female	299	61.6
Marital status		
Single	153	31.5
Married	318	65.6
Divorced	3	0.6
Separated	4	0.8
Widowed	7	1.4
Continent		
Africa	432	89.1
Asia	4	0.8
Europe	19	3.9
North America	29	6.0
Not specified	1	0.2
Country		
Africa	432	89.1
Outside Africa	53	10.9
Occupation		
Business	29	6.0
Civil servant	109	22.5
Clergy	1	0.2
Construction worker	7	1.4
Health	236	48.7
Information and technology	9	1.9
Retiree	9	1.9
Self employed	28	5.8
Unemployed	57	11.8
Level of education		
Primary	9	1.9
Secondary	23	4.7
Tertiary	236	48.7
Post tertiary	217	44.7
Total	485	100.0

Among those who knew COVID-19 was caused by a new corona virus (n = 448), health workers constituted 52.5% (235), civil servants (21.9%, 98), business (5.8%, 26), self-employed (3.8%, 17), unemployed (10.9%, 49) and others (χ^2=97.223, p<0.001). In the same subset of respondents (those who knew COVID-19 was caused by a new corona virus (n=448), details of their source of information is as follows: internet (53.6%, 240), television (23.0%, 103), WhatsApp (8.3%, 37), Facebook (2.5%, 11), workplace sensitization (7.1%, 32), newspaper (1.1%, 5), place of worship (0.9%, 4), family and friends (1.6%, 7), and others (χ^2=59.832, p=0.002). Most of the information on COVID-19 was obtained from mass media and considered to be authentic and useful (47.4%, 230/485) (Table 4).

Respondents who use mass media had higher odds of knowing that the COVID-19 pandemic was caused by a new corona virus (OR=1.16, p=0.826). Details of regression analysis between knowledge of COVID-19 and mass media are given in Table 5.

Table 2: Respondents knowledge of COVID-19.

Variables	Frequency	Percentage
Have you heard of COVID-19?		
Yes	477	98.4
No	8	1.6
What is COVID-19?		
I do not know	6	1.2
It is a bacterial illness	17	3.5
It is caused by 5g network	2	0.4
It is caused by a new corona virus	448	92.4
Its cause is unknown	12	2.5
What is peculiar about the disease?		
I am confused about it	20	4.1
It does not exist	2	0.4
It is a biological weapon	29	6.0
It is god's wrath on the world	10	2.1
It spreads and can cause death quickly	424	87.4
Does this illness have a cure?		
Yes	23	4.7
No	397	81.9
I do not know	65	13.4
If yes to the above, what is the cure?		
African herbal mixture	449	92.6
Blood sample recovered from patient	1	0.2
By drinking water twice; intake of warm water, fruits, lemon, pineapple; wash your hand twice and put on face mask	1	0.2
Chloroquine and malaria treatment according to African doctors	1	0.2
Chloroquine/hydroxychloroquine and Azithromycin coupled with supportive treatment	1	0.2
God	1	0.2
Good hygiene and treating symptoms	1	0.2
Hot herbal drinks	1	0.2
Hydroxychloroquine		
I don't know	1	0.2
Improving body immune system by taking vitamin c and alkaline fruits	1	0.2
Its treated symptomatically	1	0.2
Keeping all the precautionary measures via regular washing of hands, putting on face mask, keeping social distance of 2 meter or 6foot away from the next person, staying safe at home, going to the health center if you notice any symptoms in your body and many others	1	0.2
Madagascar and Taiwan has the information	1	0.2
New medicine dexamethasone	1	0.2
No cure yet. Just supportive management and take CDC preventative measures	10	2.1
Oxford university has produced covid-19 vaccine	1	0.2
Remdesivir	1	0.2
Some herbs	1	0.2
Some people have been cured and discharged	1	0.2
Stay clean and use your ppe	1	0.2
Taking hot water and lime juice daily	1	0.2
Boost your immunity	1	0.2
Currently the spread is stopped by?		
Divine intervention	37	7.6
I am having issues with ticking what I want which is lockdown, observing social distance etc.	1	0.2
I do not really know	15	3.1
Lockdown, observing social distance, proper hand hygiene, wearing proper face masks	416	85.8
Removing the 5G network	1	0.2
Vaccination	12	2.5
Other	3	0.6

Continued.

Variables	Frequency	Percentage
How did you get most of the information?		
Facebook	12	2.5
From work place sensitization	34	7.0
Internet	256	52.8
Newspaper	6	1.2
Place of worship	4	0.8
Television	114	23.5
Through friends and family	11	2.3
WhatsApp	37	7.6
Other	11	2.3
How have you received the information about COVID-19 disease?		
Another conspiracy theory	5	1.0
Authentic, very useful, believable and reliable	285	58.8
Mixed feelings	132	27.2
Very unreliable/suspicious	15	3.1
Western world manipulation for hidden agenda	19	3.9
Disregarded	2	0.4
Government propaganda	20	4.1
Other	7	1.4

Table 3: Information on covid-19 infection and behavioral modifications of the respondents in view of the knowledge of COVID-19.

Behavioral modification	Frequency	Percentage
Do you avoid leaving your home if not absolutely necessary?		
Always	214	44.1
Most times	162	33.4
Rarely	30	6.2
Never	14	2.9
Sometimes	65	13.3
Do you always cover your mouth and nose with a face mask if you have to leave home?		
Always	232	47.8
Most times	159	32.8
Rarely	20	4.1
Never	14	2.9
Sometimes	60	12.4
Do you ensure to always maintain 2 m/6 feet/2 arms length between you and the next person if you must leave home?		
Always	87	17.9
Most times	234	48.2
Sometimes	105	21.6
Rarely	47	9.7
Never	12	2.5
Do you ensure to always maintain 1 m/3 feet/1 arm length between you and the next person if you must leave home?		
Always	157	32.4
Most times	199	41.0
Sometimes	86	17.7
Rarely	33	6.8
Never	10	2.1
At this time do you use alcohol based hand sanitizer at least as much as possible?		
Always	219	45.2
Most times	148	30.5
Some times	96	19.8
Rarely	15	3.1
Never	7	1.4
Is COVID-19 real?		
I do not know	26	5.4
Yes	459	94.6

Continued.

Behavioral modification	Frequency	Percentage
Have you been infected by COVID-19?		
I do not know	41	8.5
I would rather not say	4	0.8
No	433	89.3
Yes	7	1.4
At this time do you wash your hands with soap and water as much as possible?		
Always	284	58.6
Most times	155	32.0
Some times	44	9.1
Rarely	1	0.2
Never	1	0.2
Has anyone close to you been infected?		
No	429	88.5
Yes	55	11.3
I don't know	1	0.2

Table 4: Cross tabulation analysis showing association between source of information and how most of the COVID-19 information was received by the respondents.

How have you received the information	How did you get most of your information?		
	Mass media (%)	Other (%)	Total (%)
Another conspiracy theory	5 (100.0)	0 (0.0)	5 (100.0)
Authentic, very useful, believable and reliable	230 (80.7)	55 (19.3)	285 (100.0)
Disregarded	0 (0.0)	2 (100.0)	2 (100.0)
Government propaganda	14 (70.0)	6 (30.0)	20 (100.0)
Mixed feelings	94 (71.2)	38 (28.8)	132 (100.0)
Very unreliable/ suspicious	11 (73.3)	4 (26.7)	15 (100.0)
Western world manipulation for hidden agenda	15 (78.9)	4 (21.1)	19 (100.0)
Other	7 (100.0)	0 (0.0)	7 (100.0)
Total	376 (77.5)	109 (22.5)	485 (100.0)

[1]χ^2 value =15.871, [2] df=7, [3]p value =0.026

Table 5: Binary logistic regression showing association between Knowledge of COVID-19 and mass media.

Knowledge of COVID-19	Odds ratio	P value
I don't know	1.00	
It is a bacterial illness	0.80	0.792
It is caused by 5G network	0.33	0.482
It is caused by a new corona virus	1.16	0.826
Its cause is unknown	0.93	0.765

p>0.05; not statistically significant

DISCUSSION

COVID-19 has become one of the largest pandemics causing significant global health challenges. This therefore, calls for the need to reduce the spread of the virus through the adherence of the prevention and control strategies adopted by the Centres for Disease Control (CDC) and the World Health Organization (WHO). This adherence practice by the populace is affected by their knowledge and also the sources of knowledge regarding COVID-19.

In the current study, majority of the respondents had heard of COVID-19 and knew its cause; 98.4% and 92.4% respectively. Majority (94.6%) also believed COVID-19 was real while 85.8% had good knowledge of COVID-19 prevention. These findings are comparable with studies conducted in China, Italy, Jordan, Ethiopia and Nigeria where the various reported knowledge of COVID-19 was >90%.[12-17] This indicates that COVID-19 is not a rare disease and its awareness globally is high.

A large proportion (87.4%) of the respondents knew the spread of COVID-19 and that it could cause death, 81.9% reported that COVID-19 had no cure and 92.6% believed that African mixture would cure COVID-19. Similar findings have been reported in some studies in Nigeria with respondents admitting intake of herbal concoctions and homemade remedies for infections with COVID-19.[18,28] In contrast, it has also been reported from research carried out in Nigeria that more than half of the respondents believed COVID-19 had a cure with more than half citing chloroquine as this cure.[17] These various beliefs about the cure of the disease reflect on the myriad of contrasting information currently being dispersed about the COVID-19 pandemic.

The practice of COVID-19 prevention strategies in the current study was low: 44.1% avoided leaving their homes if it was not absolutely necessary; only 17.9%

always maintained adequate physical distance of 2 meters when in public while 32.4% maintained at least 1 meter; 45.2% always used an alcohol-based sanitizer; 47.8% always covered their nose and mouth with face masks if in public and only a fair 58.6% would always wash their hands with soap and water as needed. Other studies also reported similar findings.[15,19,20] The gap between the knowledge and practice of the preventive strategies of covid-19 may be attributed to several factors. Inadequate acceptance of the information on this pandemic received so far, lack of personal motivation and willpower as most people are not used to nor ready to accept the 'new normal', insufficient enforcement strategies of the preventive practices by the government on the populace as well as financial constraints in acquiring some of the preventive materials like facemasks and alcohol bases hand sanitizers, whose cost skyrocketed with the onset of the pandemic. Contrary to the findings in this study, a study conducted in China observed that 89.7% of the respondents followed correct practices regarding COVID-19 prevention; this study was however conducted among health care workers.[29]

Concerning the source of information on COVID-19, the mass media was the commonest source of information (77.5%) with the use of internet being the highest in proportion (53.6%). Similar findings have been reported by some studies within and outside the Nigeria.[12,14,16,17,28,30] In Nigeria, about 85.49 million individuals used the internet as at the first quarter of 2020.[31] Several guidelines and information on COVID-19 have been uploaded online by WHO and NCDC right from the declaration of COVID-19 as a pandemic so as to make these information easily accessible to internet users.[16] The internet ought to be intensively used for the propagation of reliable information concerning COVID-19.

The association between the source of information and knowledge on COVID-19 in this research was statistically significant (p=0.002). Respondents who use mass media were more likely to know that the COVID-19 pandemic was caused by a new Corona virus (OR=1.16, p=0.826) unlike other wrong assumptions (Table 4). A study conducted by Shahmir et al found that the use of different mainstream media as sources of information was not associated significantly with the awareness of COVID-19 pandemic.[32] Different media channels can be used for timely dissemination of ever evolving information on the COVID-19. The risks of misinformation from untrusted platforms abound and could affect and confuse the knowledge on COVID-19 disease.

The association between how the information was received by the respondents and the knowledge of COVID-19 was also statistically significant (p=0.026). This observation depicts that respondents received their information from trusted/reliable sources and this enhanced their acceptance of information gotten from these sources. A study conducted in United States of America found that trust on the sources of information had an association with accurate knowledge about COVID-19.[33]

Finally, the association between occupation and knowledge of COVID-19 disease was statistically significant with a p-value of <0.001. This implies that an individual's work and possibly work place trainings the individual receives have an influence on the knowledge of the pandemic. From this research, health workers constituted the highest proportion to give the correct answers to the cause of COVID-19 disease. Similar findings have been reported by some studies. A study conducted in Nigeria reported that medically related occupation had significantly higher knowledge compared to other occupations while in China, unemployment and students were associated with lower knowledge about COVID-19.[12,18]

CONCLUSION

While most respondents had a good knowledge of the corona virus disease of 2019 (COVID-19), preventive practices such as use of facemasks in public, hand washing with soap and water, use of alcohol based hand sanitizers and maintaining adequate physical distance in public were suboptimal. This is disappointing and distressing in view of the severity of the ongoing COVID-19 pandemic.

The mass media, particularly internet and the television served as the main sources of information on this pandemic. These channels can be better mobilized in disseminating valuable, correct and timely information on the COVID-19 pandemic.

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