## PUBLIC PERCEPTION ON COVID-19 PANDEMIC IN MAIDUGURI, BORNO STATE, NIGERIA

BY

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## Abstract

In 2019, a new coronavirus (2019-nCoV) infecting humans emerged in Wuhan, China. Since the outbreak of the virus, it has spread across all parts of world with Europe, Asia and America recording high death cases. Scholars and experts from various fields have attributed the outbreak of the disease to various conspiracy theories and so on. In Nigeria, knowledge and perception about the corona virus among ordinary people has a different outlook. This study, therefore, assessed the knowledge and perceptions of people in Maiduguri, Nigeria on Covid-19. Purposive sampling technique was used to engage respondents within Maiduguri. In-depth interviews and Focus Group Discussion (FGD) was used as methods of data collection. The study found that majority of the respondents believe COVID-19 exists but showed negative attitude towards adhering to preventive measures. The study also revealed that majority of the respondents think that COVID-19 in Maiduguri and Nigeria as a whole is quite different from that of other parts of the world, and hence not as deadly as it is being portrayed. The study therefore recommended a more robust and pragmatic enlightenment programme across communities incorporating local religious and traditional leaders in the fight against covid-19.

Keywords: Covid-19, Public, Perception, Symptoms, Prevention

## Introduction

COVID-19, from the family of Coronavirus (others include SARS, H5N1, H1N1 and MERS), is a contagious respiratory illness transmitted through the eyes, nose, and mouth, via droplets from coughs and sneezes, close contact with infected person and contaminated surfaces. It has an incubation period of approximately one to fourteen days. The symptoms include cough, fever and shortness of breath, and it is diagnosed through a laboratory test. The contagion could lead to severe respiratory problems or death, particularly among the elderly and persons with underlying chronic illnesses. Some infected persons however, are carriers for the virus with no symptoms while others may experience only a mild illness and recover easily (Sauer, 2020). As there is currently no cure or vaccine for the COVID-19; medical treatments are limited to supportive measures aimed at relieving symptoms, use of research drugs and therapeutics.

There are 8,637,929 confirmed cases, 4,567,985 recoveries from the illness and 457,744 deaths worldwide as of June 19, 2020 (Worldometers, 2020). On February 27, 2020, an Italian citizen became the index case for COVID-19 in Nigeria and as at June 18, 2020, there were 18,480 laboratory-confirmed cases of COVID-19 in Nigeria with 6,307 discharges and 475 deaths (Nigeria Centre for Disease Control, NCDC, 2020). Europe, America and Asia has been the worst hit by the virus with high amount of death. In Africa, the disease has also had a fair negative impact with South Africa been the most affected. Global health experts and the WHO warned from the onset that developing countries of Africa may find it difficult to manage the pandemic due to inadequate health facilities and capacities (Walker et al., 2020; WHO, 2020). Similarly, Gilbert and colleagues' modelling rated Nigeria as vulnerable to exposing huge populations to COVID-19 (potentially 200 million citizens), with a moderate capacity to control the outbreak (Gilbert et al., 2020).

The outbreak of corona virus in December 2019 in Wuhan city in China has attracted a plethora of scholarly write-ups and interpretations globally. As a matter of fact, studies have shown that the disease may have originated as a deliberate effort in other to gain control. Other studies have also alleged that the pandemic is a biological warfare while medical experts have maintained that the virus has nothing to do with conspiracy or politics (WHO, 2020).

In Nigeria, the corona virus outbreak has been perceived differently especially by non-medical practitioners. At early stages of a pandemic, precautionary measures are needed to protect against possible danger and curtail the disease spread. In line with this therefore, the Nigerian government (just like other governments around the world) introduced various containment strategies which have interfered with individuals' daily lives and have led to severe economic loss and social disruption. People were coerced to stay at home, businesses and offices were closed, exempting healthcare facilities/workers and essential? commercial establishments. For Nigerians making a living in the informal economy, their livelihood is now threatened by the lockdown since much of their activities and businesses involve face-to-face contact. In Nigeria there is no social safety net, no access to food stamps or unemployment benefits, most people earn their living on a daily basis. Regardless of this however, there has so far been a high degree of compliance with the government directives, Nigerians are engaging in vigilant hand washing, practicing social distancing and self-isolation, and avoiding going to work, school or crowded areas. Even most religious leaders agreed to stop large gatherings, forbid the shaking of hands and directed church members to pray at home and use hand sanitizers (Makinde, Nwogu, Ajaja&Alagbe, 2020; Olatunji, 2020).

On the other hand, some Nigerians due to superstitions and ignorance of the science behind the infection prefer only to pray (even violating the social distancing rule by attending churches or mosques during the lockdown) and use anointing oils, talisman, herbs or rituals (Abati, 2020) to prevent contracting and spreading the virus. Some also use social media platforms (e.g. Whatsapp, Twitter, Facebook and Instagram) to spread fear, project fake news concerning the source of the virus, promote prejudice against China, incite panic buying, proffer fake cures and undermine medical advice, deliberately or ignorantly (Hassan, 2020). They opined that lockdown, self-isolation and social distancing are un-African solutions to the pandemic (Abati, 2020).

Given the importance of knowledge of precautionary activities in curbing the spread of infectious diseases such as the novel COVID-19, it is important to research on people's health knowledge as it relates to the pandemic. The ordinary man in Nigeria just like those in the scholarly circles also have their own perception on the novel corona virus which informs their behavior and attitude regarding the pandemic. This study therefore aims to ascertain the knowledge and perception of Nigerians from different walks of life on the existence or otherwise of COVID-19. The present study is guided by the following questions:

- i. WhatistheknowledgeofpeopleofMaiduguriabouttheexistenceofCOVID-19?
- ii. HowdopeopleofMaiduguriviewthesymptomsofCOVID-19?
- iii. WhatistheperceptionofpeopleofMaiduguriontheseverityofCOVID-19?
- iv. WhatistheperceptionofpeopleofMaidugurionthepreventivemeasuresofCOVID-19?

## Literature Review

One of the issues surrounding the outbreak of the corona virus pandemic globally is the controversial origin and source of the disease. Politicians, world leaders, religious leaders, and scholars from various disciplines have had their take on the corona virus outbreak. On the one hand the corona virus is seen as a deliberate and well planned conspiracy to gain control and power while on the other hand numerous writers as well as the World Health Organization (WHO) have debunked such conspiracies as baseless.

Coutard, Valle, Lamballerie, Canard, Seidah&Decroly (2020)in their study of the genetic analysis of the new corona virus found that despite a high similarity with the genome sequence of SARS-CoV and SARS-like CoVs, there is a peculiar furin-like cleavage site in the Spike protein of the 2019-nCoV, lacking in the other SARS-like CoVs. The study identified a gain of function to the 2019-nCoV for efficient spreading in the human population compared to other corona viruses. This indicates that the new corona virus is more deadly than the other corona viruses suggesting that it could be a deliberate act intended to achieve 'something'. Francis Boyle, a law professor, expressed support for the bioweapon theory while citing the above study as a scientific proof that the new corona virus is as a result of unintended leaks in the Chinese laboratory.

Elwood (2020) on the other hand argues that it would be irresponsible to suggest that the source of the corona virus outbreak is an error in a Chinese military biological weapons programme as purported in social media platforms. He further posits that without greater Chinese transparency on the outbreak of the virus, we cannot be entirely completely sure of what to believe (Elwood, 2020).

that numerous writers in the Arabic press have promoted the conspiracy theory that COVID-19, as well as SARS and the swine flu virus, were deliberately created and spread to sell vaccines against these diseases, and it is part of an economic and psychological war waged by the U.S. against China with the aim of weakening it and presenting it as a backward country and a source of diseases (John, 2020). Iraqi political analyst Sabah Al-Akili on Al-Etejah TV, Saudi daily Al-Watan writer Sa'ud Al-Shehry, Syrian daily Al-Thawra columnist Hussein Saqer, and Egyptian journalist Ahmad Rif'at on Egyptian news website Vetogate, were some examples given by MEMRI as propagators of the U.S. biowarfare conspiracy theory in the Arabic world.

A study by Calisher, Carroll, Colwell, Corley, Daszak, Drosten, Enjuanes, Farrar, Field, Golding, Gorbalenya, Haagmans, Hughes, Karesh, Keusch, Lam, Lubroth, Mackenzie, Madoff, Mazet, Palese, Perlman, Poon, Roizman, Saif, Subbarao& Turner (2020) shows that Covid-19 does not have a natural origin thereby condemning conspiracy theories. Even so, conspiracy theories have appeared both in social media and in mainstream news outlets, and are heavily influenced by geopolitics (Sharma, 2020). The World Health Organisation (WHO) have also indicated there is no evidence for these claims and that such claims hamper the efforts to fight the outbreak of the virus.

Olapegba&Ayandele, Olusola&Kolawole, Samson &Oguntayo, Rotimi&Gandi, Joshua &Dangiwa, Abdullahi&Ottu, Iboro&Iorfa, Kator (2020) in their study on the knowledge of Nigerians on COVID-19 found that many Nigerians believe COVID-19 is a biological weapon designed by China while others see it as a severe illness transmitted to people from wild animals. Kaszeta, 2020 in another study affirms that claims that the corona virus outbreak is a well-planned conspiracy has no scientific evidence to support it. This indicates that beyond the science, however, there are practical reasons Covid-19 biowarfare claims make no sense. He stated thus;

"We can look at history, military strategy and geopolitics as well as the life sciences. Biological warfare and biological weapons are an arcane subject little understood by the public. Indeed, public knowledge in this area seems to be far more based on science-fiction novels and films than on the actual history of the subject. During the Cold War, both East and West spent money and scientific effort on biological warfare in a clandestine arms race. I was privileged that in the 1990s and early 2000s I got to know the last remaining U.S. biological weapons specialists (the program ended in 1970) and also got to speak to defectors from the Soviet program. As I learned from them, biological warfare is actually a tedious and expensive business" (Kaszeta, 2020).

One of the first and recent studies analyzing attitudes and knowledge, about Coronavirus carried out in Hubei, conclude that attitudes towards government measures to contain the epidemic are highly associated with the level of knowledge about Covid-19 (Zhong, Luo, Li, Zhang, Liu, Li, and Yi, 2020). The authors assert that the higher the level of information, and education, the more the individuals would maintain a positive attitude towards Covid-19 preventive practices (Deblina, Tripathy, Kar, Sharma, Verma (2020); Zhong et al., 2020). A key factor is therefore the perception of risk that would contribute to the commitment to symptom prevention during outbreaks of global epidemics (Deblina et al., 2020; Corrin et al., 2020; Janjua et al., 2007; Lau et al., 2007, Smith, 2006).

The perception of risk of being infected by the Coronavirus would be mediated by the type of information that the individual hold. Disinformation or lack of information would be an additional barrier, increasing this the probability of infection (Janjua et al., 2007). What is interesting to consider is that, people make judgments based on their own perception of risk, but not on the real risk (Smith, 2006). In fact, in an examination during the spread of the SARS epidemic, it is noted that psychological responses potentially generate massive distress. The author even describes these as "disproportionate" reactions (Brooks, Webster, Smith, Woodland, Wessely, Greenberg, Rubin 2020), the same ones that any citizen might be susceptible to experience.

In this context, exhaustive analyses under the H1N1 influenza epidemic carried out by specialists in Australia, it is recognized that the mass panic in the population would be significantly influenced by a poor policy of public communication (Davis, Mark & Stephenson, Niamh & Flowers, Paul, 2011). This governmental factor would entail risks not only in the population itself, but also in the noncompliance with the rules for containment of the epidemic (Davis et al., 2011). Factors related to the attitude of the individual would be influencing the effectiveness of the containment measures (Deblina et al., 2020; Davies et al., 2020). Interestingly, the attitude of the population towards public policies implemented to reduce the number of infected people continues to be passive, affecting their own health status and that of their close relatives.

The lack of knowledge about the COVID-19 disease would be a mediating element in the increase of cases infected by the virus. In a similar case, it was found that during the isolation stage to prevent contagion by the Ebola virus, the poor understanding of the disease and its airborne infection process contributed to the increase in case rates (Ilesanmi&Alele, 2016). Knowledge of the infection process and its precautions may be linked to the determination of citizens to follow government guidelines regarding quarantine measures. This same perspective is supported by numerous analyses, where it is reported that the level of knowledge directly affects the perception of susceptibility to disease (Ilesanmi&Alele, 2016; Janjua, Razaq, Chandir, Rozi, Mahmood, 2007; Smith, 2006)

As noted in systematic reviews, it is critical to educate affected populations to broaden their understanding of the disease cycle; and thus facilitate the adoption of measures to prevent the spread of the disease (Corrin et al., 2020). Contrary to this last analysis, in developed countries like Singapore it is described that the citizens require little information to obey the measures imposed by the government, being this last one a demonstration of high trustworthiness placed in their governors (Deurenberg, Foo, Low, Chan, Vijaya, Lee, 2005). It is important to comment that there could be a bias in this last study, given that this developed country-based study mainly assesses people with a high level of education during the epidemic.

In terms of severity, studies have shown that despite the high death toll resulting from corona virus in Europe, Asia and America, Nigerians, especially the daily income earners have expressed their disapproval of the measures taken by government to contain the pandemic particularly the lockdown policy. A study by Bernard (2020) shows that some Nigerians see the 'hunger' as a more severe virus than the corona virus.

Another study by Umar (2020) suggests that this is true. In his study, he focused on how people have been surviving the corona virus amidst the lockdown of business activities. Certain protesters lamented that the hunger which is as a result of the lockdown is more severe than the virus itself.

#### Method

The study is mainly qualitative in nature and thus considers interaction, action and behavior of social actors as very central (Mason, 2002). The study made use of purposive sampling technique to select people with particular characteristics that addressed the research questions. The main methods of for the data collection were in-depth interview and focus group discussions organized by the authors in the study area. Local religious and traditional leaders, youths; educated and non-educated were purposively selected from different parts of Maiduguri. Secondary data were sourced from published researches, government records and data obtained from responses of people living within the study area. This study covered the period from January, 2020 to June 2020. Available public information pertaining covid-19 symptoms and preventive measures are used as indicators for gauging respondents' knowledge and perception about the virus in Maiduguri. The study therefore did not focus deeply on the medical technicalities about the disease. In terms of sample selection, youths, local traditional and religious leaders were eligible for inclusion.

## **Findings**

The discourse pertaining COVID-19 is a global topic that has captured the attention of scholars as well as those outside the academic environment. With the current rate at which the number of cases has skyrocketed in Nigeria, an important question arises regarding the knowledge and perception of Nigerians as it relates to the existence, symptoms, severity and preventive measures of Covid-19. For this reason, the authors investigated the knowledge and perceptions of people in Maiduguri on the existence, symptoms severity, and preventive measures of Covid-19.

The study revealed that most people in Maiduguri believe that the virus exists outside Maiduguri while adding that China is the birthplace. The study further revealed that there are some elements of spirituality attached to the outbreak of the virus as the local religious leaders interviewed explained that the virus could be a punishment by God because of the sins and atrocities committed in the world. The local traditional leaders such as the Bulamas and Lawans expressed that the disease exists since the appropriate authorities say it exists. However, they also expressed that since the outbreak in Maiduguri, it has been difficult to adhere to preventive measures announced by government such as social distance and wearing of face mask because the people are not used to it. Some respondents believe that the virus exist in Nigeria but blown out of proportion. In the words of one of the respondents "we don't believe in the number of cases announced in Maiduguri because we don't know anyone in our community or neighboring community that has contracted the disease, all we hear is increase in number of cases". This thinking concurs with the argument by Idayat (2020) that many Nigerians have refused to believe the

disease's existence in Nigeria. She further states that some social media activists and influencers are responsible for spreading fake news about the virus thereby confusing people the more.

Furthermore, using the most common symptoms of Covid-19 such as fever, dry cough and tiredness as indicators our study revealed that respondents within the study area perceive the symptoms of corona virus as similar to other regular illnesses such as malaria, typhoid and fever and therefore 'no big deal' as stated by one of the respondents. Another respondent further stated that '...this is not the right time to go to the hospital for testing when you are sick because the first thing they will do is to quarantine you even before they examine you...' Other respondents expressed that the symptoms of the virus as is not new or strange. In the words of one of the respondent, "considering the symptoms of corona virus, if we all are to get tested in Bornol'm sure most of us will test positive". This indicates that people in the study area have a slightly fair knowledge about the symptoms of covid-19 and as a result showed negative attitude towards going for tests or self-isolation, as well as the use of preventive measures such as wearing of face masks, washing of hands and social distancing. On the other hand, experts have expressed fears that many people across the 36 states of the federation and the Federal Capital Territory (FCT) might have been exposed to the coronavirus (COVID-19) but their status could not be ascertained because only 0.1% of the population has been tested which is an insignificant size (Ojoma et al., 2020).

Our study also revealed that respondents strongly believe that the 'version' of corona virus that exists in Maiduguri and Nigeria as a whole is not as severe as that of Europe, Asia and America. This indicates that people believe that the virus is not as deadly as the media portrays it here in Nigeria citing the low number of death cases as a strong reason. As stated by some of the respondents, the virus seemed dangerous at first but now, we can learn to live with it and go about our normal life. The WHO special envoy for Covid-19 David Nabarro on Covid-19 remarked that people must learn to live with the virus and go about their normal business despite the widespread infections that may occur. Another study by Michael (2020) also supports this argument suggesting that the understanding of the virus is part of everyday life hence people must focus on living with and mitigating the risk of Covid-19 before a cure is found.

Lastly, the study revealed that people are reluctant to adhere to preventive measures especially the use of face mask in gatherings. In the course of conducting FGD, it was observed that some of the respondents did not adhere strictly to the social distance rule in the sitting arrangement. On the other hand, they displayed sufficient knowledge about the preventive measures when asked. This indicates that the people are reluctant in practicing preventive measures because they view the virus as normal regular disease. The study by Ojoma (2020) corroborates with this study as it reveals that a lot of Nigerians violated the protective measures against the disease. Experts have further warned that Nigeria could experience severe consequences of Covid-19 if people continue to violate the measures to be put in place to cushion the effect of the virus.

## Conclusion & Recommendation

The study has shown that people within the study area have a fair knowledge about the existence of the virus. The findings of the study indicate that there is a gap between knowledge and practice of preventive measures pertaining Covid-19 among people of Maiduguri. This therefore necessitates enlightenment campaigns across communities with special focus on people with less formal education. Although the government has taken some steps in limiting the spread of the disease, we suggest that more awareness lectures on the symptoms and reality of corona virus be carried out across Maiduguri by government and relevant bodies. Furthermore, in response to the reluctance of people to adhere to preventive measures, we suggest that a more robust and pragmatic approach be implemented by government and concerned bodies in ensuring compliance. Finally, because of the respect and authority traditional and religious leaders command in the society, the researchers suggest that they should be incorporated in the fight against Covid-19 within their own communities.

## Limitations of the Study

The study made use of available public information pertaining corona virus symptoms and preventive measures as indicators for gauging peoples knowledge and perception about the virus. The study therefore did not focus deeply on medical technicalities of the virus. There was also an oversampling of Kanuri respondents leading to selection bias. Also, the study may not be generalizable to the entire educated population in Maiduguri because there was more focus on people with less formal education. Notwithstanding the above limitations the study provides a box of information for understanding the perception of people about covid-19 in Maiduguri. This study been an exploratory one, there is need for further research to build on the evidence base for the study of people's perception on covid-19 and other related diseases.

## References

- Bernard, K. (2020). COVID-19 in Nigeria: a disease of hunger. Retrieved from https://doi.org/10.1016/ S2213-2600(20)30220-4.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., & Greenberg, N. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, 2020;395(10227):912-20.
- Calisher et al. (2020). Statement in support of the scientists, public health professionals and medical professionals of China Combatting COVID-19. The Lancet Publishers.
- Callum, H. (2020). Coronavirus shock claim: Smoking gun of Chinese lab leak' exposed by bioweapons e x p e r t . R e t r i e v e d f r o m http://www.google.com/amp/s/www.express.co.uk/news/weird/1253778/coronavirus-chinease-lab-leak-bioweapon-wuhan-institute-virology-francis-boyle-spt/amp
- Corrin, T, Waddell, L., Greig, J., Young, I., Hierlihy, C., & Mascarenhas, M. (2017). Risk perceptions, attitudes, and knowledge of chikungunya among the public and health professionals: A systematic review. *Tropical Medicine and Health*, 45(1):1-15.
- Coutard, E. et al. (2020). The spike glycoprotein of the new coronavirus 2019-nCoV contains a furinlike cleavage site absent in CoV of the same clade. *Antiviral Research*.
- Davis, M., Stephenson, N., & Flowers, Paul. (2011). Compliant, complacent or panicked? Investigating the problematisation of the Australian general public in pandemic influenza control. *Social science & medicine* 72. 912-8.
- Deblina, Roy., SarvodayaTripathy, S., Kumar, K., Nivedita S., &Sudhir, K. V. (2020). VKP: Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Journal of the Neurological Sciences*, 116544.
- Deurenberg-Yap, M., Foo, L. L., Low, Y. Y., Chan, S. P., Vijaya, K., & Lee. M. (2005). The Singaporean response to the SARS outbreak: Knowledge sufficiency versus public trust. *Health Promotion International*, 20(4):320-6.
- Elwood, T. (2020). *Transparency will convince the world China is a friend*. Retrieved from <a href="http://www.google.com/amp/s/www.telegraph.co.uk/politics/2020/2/29">http://www.google.com/amp/s/www.telegraph.co.uk/politics/2020/2/29</a>
- Gilbert, M. Pullano, G., & Pinotti, F. (2020). Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study. Lancet publisher. Retrieved from https://doi.org/10.1016/S0140-6736(20)30411-6.
- Holmes, C., Boyce, M., Katz, R. (2020). *Africa is not starting from scratch on COVID-19*. Retrieved from https://www.thinkglobalhealth.org/article/africa-not-starting-scratch-covid-19
- Idayat, H. (2020). The other COVID-19 pandemic: Fake news. Retrieved from https://africanarguments.org/2020/03/26/the-other-covid-19-pandemic-fake-news/
- Ilesanmi, O., Alele, F. O. (2014). Knowledge, attitude and perception of Ebola Virus Disease among Secondary School Students in Ondo State, Nigeria. PLoS Currents.
- Janjua, N. Z., Razaq M., Chandir, S., Rozi, S., & Mahmood, B. (2007). Poor knowledge Predictor of nonadherence to universal precautions for blood borne pathogens at first level care facilities in Pakistan. *BMC Infectious Diseases*,7:1-11.
- John, A. (2020). Coronavirus: The invisible Killer. Libera Publishing.
- Kaszeta, D. (2020). No, the Coronavirus is not a Biological Weapon. Retrieved from https://www.google.com/amp/s/www.washingtonpost.com/outlook/2020/04/26
- Lau, J. T. F. F., Kim, J. H., Tsui, H., & Griffiths, S. (2007). Perceptions related to human avian influenza and their associations with anticipated psychological and behavioral responses at the onset of outbreak in the Hong Kong Chinese general population. *American Journal of Infection Control*, 35(1):38-49.
- Li, Y. C., Bai, W. Z., & Hashikawa, T. (2020). The neuroinvasive potential of SARS-CoV2 may play a role in the respiratory failure of COVID-19 patients. *Journal of Medical Virology*, 25728
- Mason, J. (2002). Qualitative Researching, 2<sup>nd</sup> Ed. London: Sage.
- Michael, B. (2020). Why we need to learn to live with COVID-19. Retrieved from https://www.google.com/amp/s/medicalxpress.com/news/2020-06-covid--1.amp
- Musa, E., Nasidi A., Shuaib, F., Nguku, P. M., & Vaz, R. G. (2016). Nigeria's Ebola outbreak response: lessons for future epidemic preparedness. *Arch Med*; 8: 6.
- Nabarro, M. (2020). We must learn to live with Covid-19. Retrieved from https://www.bbc.com/news/av/health-52369969/who-s-nabarro-we-must-learn-to-live-with-covid-19
- Nigeria Centre for Disease Control, (2020). COVID-19 outbreak in Nigeria: situation report. March 9, 2020. Retrieved from https://ncdc.gov.ng/diseases/ sitreps/?cat=14&name=An%20update%20 of%20COVID-19%20outbreak%20in%20 Nigeria.

- Ojoma, et al. (2020). Nigeria: COVID-19 Danger Looms As Nigerians Jettison Safety Measures. Retrieved from https://allafrica.com/stories/202006150203.html.
- Richards, P. (2017). Ebola: How a people's science helped end an epidemic. London: Zed Books
- Sauer, L. M. (2020). What Is Coronavirus? Available online at https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus
- Sharma, G. (2020). Why are there so many conspiracy theories around the Corona Virus? Aljazeera.
- Smith, R. D. (2006). Responding to global infectious disease outbreaks: Lessons from SARS on the role of risk perception, communication and management. *Social Science and Medicine*; 63(12):3113-23.
- Umar, S. U. (2020). Nigeria: Surviving Coronavirus, protesting the Hunger Virus. All Africa Global Media.
- Unah, L. (2020). Nigeria will deal with this: High alert after Coronavirus case. Retrieved from https://www.aljazeera.com/news/2020/03/deal-highalert-coronavirus-case-200301140838366.html
- World Health Organization, (2020). WHO Director-General's opening remarks at the media briefing on COVID-19—11 March 2020. Geneva, Switzerland: World Health Organization; 2020. Retrieved from https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-themedia-briefing-on-covid-19—11-march-2020
- Worldometers, (2020). Coronavirus Update (Live). Available online at <a href="https://www.worldometers.info/coronavirus/">https://www.worldometers.info/coronavirus/</a>
- Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G., & Li W. T. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. International *Journal of Biological Science*; 16(10):1745-52.

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