

## MINIREVIEW

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## COVID-19 Pandemic: Perception, Practices and Preparedness in Nigeria

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### Abstract

Since Coronavirus disease 19 (COVID-19) pandemic was declared a public health emergency of international concern by the World Health Organization (WHO) on the 30th of January, 2020. Nigeria, with 343 cases and 10 deaths as at April 14, 2020 is classified as one of the countries at high risk of importation of the disease from China. The ability to limit and control local transmission after importation depends on the application and execution of strict measures of detection, prevention and control. The initial response of some percentage of the population was of doubt due to the ignorance of the far-reaching effect of the virus. More than 1,700 leaders of religious groups and communities in all 36 States and FCT were therefore sensitized to increase awareness level and consequences of COVID-19 among the populace. Major response activities were initiated before the first case was reported and were upgraded within weeks after the number of cases began to rise. Based on previous experience of perception, and awareness of other viral disease outbreaks, COVID-19 infection prevention and control interventions recommended by WHO are yet to be fully entrenched in the Nigerian public health system in order to reduce the general risk of contracting SARS-CoV-2 from infected individuals. There is therefore the need to execute strict measures of detection, prevention and control and drive compliance with the Nigeria Centre for Disease Control (NCDC) and WHO guidelines in Nigeria.

**Keywords:** COVID-19, Nigeria, Perception, Practices, Awareness, Preparedness

## 1.0 INTRODUCTION

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is a new novel virus responsible for coronavirus disease 19 (COVID-19). It is an enveloped positive stranded RNA virus that has been identified as a member of the family Coronaviridae (members generally referred to as Coronaviruses) with a genome size that varies from 26kb to 32kb [1,2]. There are four subfamilies of the virus that exist: Alpha-coronaviruses, Beta-coronaviruses, gamma-coronaviruses and delta-coronaviruses. Alpha and beta-coronaviruses originate from mammals, most especially bats and the coronavirus that is responsible for the COVID-19 belongs to the beta coronavirus lineage [3,4]. There are two categories of the virus in this family based on their virulence; the low pathogenic coronaviruses (CoVs) and the high pathogenic CoVs [2,3]. SARS-CoV-2 belongs to the latter group and has been reported to be the most virulent of the members of the group where other members include the Middle East Respiratory Syndrome (MERS) and the Severe Acute Respiratory Syndrome (SARS) CoVs [1,3].

The COVID-19 spreads primarily by human to human transmission within close contact via respiratory droplets or via contact with mucous membranes from the eyes, nose and mouth as well as virus-contaminated hands and fomites [4,5]. Infected persons become asymptomatic for the first few days of infection after which major symptoms such as cough, shortness of breath, sore throat and hyperthermia begin to manifest [6]. As at the 14th of April, 2020, the pandemic has taken a toll on the global community with almost 1.9 million confirmed cases and over 120,000 deaths as countries seek to combat the spread. In Africa, the virus has spread rapidly across countries in a matter of weeks [7, 8], more than 15,000 cases have been reported (Figure 1).

In Nigeria, a total of 442 cases of COVID-19 had been confirmed and 13 deaths had been recorded across different States with Lagos (>250 cases) being the epicentre and the most affected State followed by Abuja (FCT) (>65 cases) [9]. However, there may also be unknown and unreported cases but surveillance teams are being deployed to different affected States to monitor the extent of the spread.

To respond to this pandemic, many countries are using a combination of containment and weakening activities with the intention of delaying major surges of patients and leveling the demand for hospital beds, while protecting the most vulnerable from infections [7]. Most national response strategies include varying levels of contact tracing and self-isolation or quarantine; promotion of public health measures including hand washing, respiratory etiquette, and social distancing; preparation of health systems for a surge of severally ill

patients who require isolation, oxygen and mechanical ventilation; strengthening health facility infection prevention and control, with special attention to nursing home facilities, and postponement or cancellation of large scale public gatherings. This review paper assessed the perception among communities, Government and other stakeholders' practices and levels of preparedness for control of COVID-19 in Nigeria.

## 2.0 PERCEPTION ON AWARENESS AND VULNERABILITY TO COVID-19 IN NIGERIA

According to a research by Gilbert *et al.*, [10], Nigeria is classified as one of the countries at high risk of importation of the disease from China, which has variable capacity (for quarantine, hospital admissions and intensive care) and have high vulnerability. Nigerian government announced the first confirmed case of the novel coronavirus disease (COVID-19) in the morning of February 27th, 2020 [7].

After the first case was reported, with the support of the polio personnel, the task of tracking a total of 6,655 COVID-19 contacts and conducting follow up visits began. Technical officers sensitized more than 1,700 leaders of religious groups and communities in all 36 states and FCT. Since the beginning of the outbreak, the Nigerian Ministry of Health and the multi-sectorial coronavirus preparedness group, led by the Nigeria Centre for Disease Control (NCDC) activated national Emergency Operations Centers (EOCs) in all of the affected states to coordinate the outbreak response activities [12]. This model was first introduced to Nigeria by the Polio program and is organized under six functional units: Management and coordination, Epidemiology and surveillance, Case management, Laboratory services, Risk communication, and Point of entry [12].

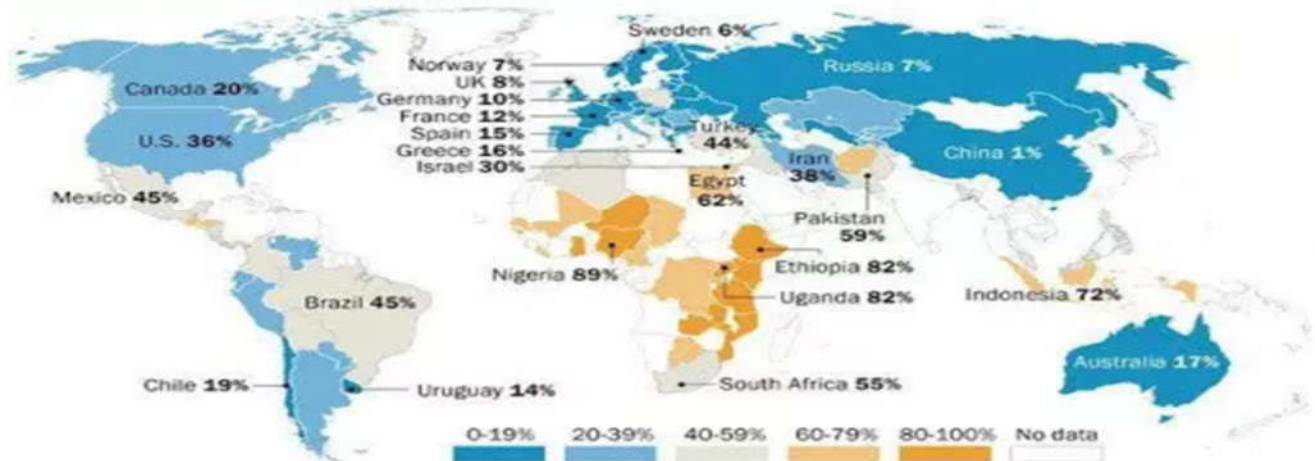
The initial response of some percentage of the population was of doubt due to the ignorance of the far-reaching effect of the virus. Within weeks of increase in the number of cases reported, doubts began to fizzle out. The NCDC has now succeeded in creating awareness on a broad scale and citizens are now more safety conscious while practicing the basic prevention measures.

## 3.0 PRACTICES AND POLICIES FOR PREVENTION AND CONTROL OF LOCAL TRANSMISSION OF SARS-COV-2

The management and control of the virus importations strongly rely on the country's health system. As a pandemic which is a public health emergency of international concern, the ability to limit and control its local transmission after importation depends on the

**Weekly worship attendance highest in sub-Saharan Africa**

*% who say they attend worship services at least weekly*



**Figure 1.** Global Religious Worship Services Attendance Pattern [11]

**Source:** World Economic Forum, 2020

application and execution of strict measures of detection, prevention and control. Measures to control this pandemic include heightened surveillance and rapid identification of suspected cases, followed by patient transfer and isolation, rapid diagnosis, contact-tracing and follow up of contacts [10, 11].

The following practices recommended by the NCDC are taken as precautionary measures to avoid the spread of the virus:

- ◆ Regular and thorough washing of hands with soap and water and/or the use of alcohol-based hand sanitizer after coming in contact with surfaces or people.
- ◆ Maintaining at least 2 meters (6 feet) distance between yourself and anyone who is coughing or sneezing.
- ◆ People with persistent coughing or sneezing should stay at home or keep a social distance (do not mix with crowds); let such contact designated/recommended health care giver.
- ◆ Make sure you and people around you follow good respiratory hygiene, meaning cover your mouth and nose with a tissue paper while sneezing or coughing and do so into your sleeve of bent elbows. Be sure to dispose of the used tissue immediately.
- ◆ People are advised to stay home if they feel sick with symptoms like fever, cough and difficulty breathing.
- ◆ Stay informed on the latest developments about COVID-19 through official channels on Television, Radio, including the Lagos State Ministry of Health,

NCDC and Federal Ministry of Health, NAFDAC, CDC and WHO [12].

As the confirmed cases of infected people began to rise in the country, government policies to prevent wider spread were added to the already standing practices which included measures such as social distancing and restricted movement. Religion is a very vital aspect of human life in Africa, and religious as well as other social gatherings are very vital to Africans [11]. Weekly worship attendance is known to be the highest in sub-Saharan Africa (Figure 1). Therefore restricting religious gatherings in a bid to slow the pandemic in Africa has proved challenging. In Nigeria, many religious leaders have flouted the government orders by holding religious services while the lockdown policy subsisted. However, with the lockdown being imposed by States and which is being enforced by law enforcement agents, religious gatherings have been largely controlled

**4.0 PREPAREDNESS OF NIGERIAN GOVERNMENT FOR COVID-19 OUTBREAK**

The Any disease outbreak in Africa’s most populated country is never taken lightly and with the sobriety of the global situation of the pandemic, Nigerian government had to move fast and mobilize all resources for response to the outbreak. The Nigerian government, through the Federal Ministry of Health (FMOH) has been strengthening measures to ensure the outbreak is controlled and contained quickly. Among the organizations first called for support was the existing polio program. This is due to its human resources, technical expertise, disease surveillance and community

**Table 1.** COVID-19 Cases and Death Reported by Region, in Africa as at 14th April 2020 [19]

Africa	Country	Cases		Deaths		Recoveries		Cumulative CFR (%)	Countries in each region	
		New*	Total	New*	Total	New*	Total		# countries affected	# countries in the region
<b>TOTAL</b>		<b>298</b>	<b>15,284</b>	<b>15</b>	<b>816</b>	<b>86</b>	<b>2895</b>	<b>5.34</b>	<b>52</b>	<b>55</b>
<b>Region</b>	<b>Central</b>	28	1,274	1	39	38	170	<b>3.06</b>	9	9
	<b>Eastern</b>	37	1,377	0	32	0	232	<b>2.32</b>	13	14
	<b>Northern</b>	161	6,625	14	619	48	1,336	<b>9.34</b>	6	7
	<b>Southern</b>	3	2,434	0	37	0	455	<b>1.52</b>	9	10
	<b>Western</b>	69	3,574	0	89	0	702	<b>2.49</b>	15	15

Source: www.africanews.com

networks as well as its logistical capacity [12].

The first confirmed case of the virus was announced in Nigeria on 29th February, 2020 but strict measures were not put in place until the number of confirmed cases increased. As at the 18th of March, travel bans on high-risk countries from flying into Nigeria was announced with an intention to reduce immigration of infected persons. Policy on social distancing began to be enforced in a bid to curb the spread. With the continuous increase in the cases of the COVID-19, the President of the Federal Republic of Nigeria declared a lockdown on Abuja, Lagos and Ogun states starting from 11:59 p.m. on the 30th of March, 2020 for a period of 14 days. These locations were the first places to have diagnosed people with the virus. More than half of the cases contracted the virus after returning from high risk countries, 10% of the cases are contacts of already confirmed cases and the remaining 36% of the cases have incomplete epidemiological information [13].

Major response activities were initiated before the first case was reported but were upgraded within weeks after the number of cases began to rise [14]. Some of the response activities include:

- I. The establishment of daily laboratory testing capacity of about 1500 people.
- II. The setup of a laboratory network across the 6 geopolitical zones with 7 laboratories coming on board.
- III. The deployment of Rapid Response Teams (RRT) across all the states

As part of readiness to curtail COVID-19 pandemic, it is necessary to put forth more measures of surveillance

across the States. Despite lockdown policies certain interstate transits are still occurring because of indispensable work activities in the country. Despite the rising pandemic casualties, a total of 58 persons were reported on the 11th of April 2020 to have been discharged since the first case was reported. They had been treated and had tested negative to COVID-19 twice. These all proved efficacy of the activities of the health institutions put in place to handle the pandemic. So far, the case seems to have been handled without much hiccups.

### 5.0 STRATEGIC PREPAREDNESS FOR COVID-19 INFECTION PREVENTION AND CONTROL

To date, increasing rate of severe and fatal pneumonia caused by SARS-CoV-2 keeps stemming the mortality rate across the globe. Nigeria is not left out of the scourge and this requires immediate and urgent infection control [15]. High morbidity rate of SARS-CoV-2 pneumonia needs empiric and practical infection prevention strategies which could be effectively implemented through door-to-door awareness programs on the use of alcohol-based sanitizer, continuous hand washing and maintaining social distance. Not only could these measures mitigate the spread and limit infectivity but adequate and strategic clinical and public health preparedness are strong indicators for the prevention of the virus transmission and co-infection of other communicable diseases [16]. Based on previous experience of perception and awareness of other viral disease outbreaks, COVID19 infection control interventions recommended by WHO are yet to be fully entrenched in the Nigerian public health system in order

to reduce the general risk of contracting the disease from infected individuals.

Considering the effort of the government agencies towards various awareness programs, efforts should be geared towards scaling up health facilities, re-orientation and training of medical personnel and increasing level of utilization of personal protective equipment (PPE) as strategies for preparedness and prevention [17]. Although, public awareness is improved via social and print media, and radio programs which largely enhances dissemination of information and knowledge of COVID-19, more scientifically proven and evidenced-based data are required for differentiating COVID-19 from other respiratory infections [18]. In spite of these assertions, preparedness on the part of the individual, government and international health agencies should be synergized with common front to combat and limit the spread and fatality of COVID-19 in Nigeria.

## 6.0 CONCLUSION

As the fight against COVID-19 continues, Nigerian government at all tiers must increase the level of preparedness, continue to sensitize the general public to strictly adhere and practice the WHO recommendations that will prevent the spread of the virus. More efforts need to be directed at creating more awareness and convincing people about the existence and spread of COVID-19. Continuous communication of risks, community engagements, surveillance, quick response of medical teams and other readiness and response operations must be scaled up urgently. These practices should help to reduce the incidence and fatality of the disease in Nigeria.

## References

1. Akanbi AO., Opaleye OO., Olowe OA and Ojurongbe O. Covid-19: An Insight into The Pandemic of a New Emerging Coronavirus. *Pan African Journal of Life Sciences*. 2020;4: 194-199.
2. To KK, Hung IF, Chan JF, Yuen KY. From SARS coronavirus to novel animal and human coronaviruses. *J Thorac Dis*. 2013;5(Suppl 2):S103-108. doi: 10.3978/j.issn.2072-1439.2013.06.02.
3. Xu J, Zhao S, Teng T, Abdalla AE, Zhu W, Xie L, Wang Y, Guo X. Systematic Comparison of Two Animal-to-Human Transmitted Human Coronaviruses: SARS-CoV-2 and SARS-CoV. *Viruses*. 2020;12(2):E244. doi: 10.3390/v12020244.
4. Velavan, T.P. & Meyer, C.G. The COVID-19 epidemic. *Tropical Medicine and International Health*. 2020;25 (3): 278-280.
5. WHO Int 2020. Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations. World Health Organization, International [cited 2020, 09/04]. Available from: <https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>.
6. Guo Y., Cao Q., Hong Z., Tan Y., Chen S., Jin H., Tan K., Wang D. and Yan Y. The origin, transmission and clinical therapies on coronavirus disease 2019(COVID-19) outbreak – an update on the status. *Military Medical Research*.2020; 7:11.
7. Bedford, J., Enria, D., Giesecke, J., Heymann, D. L., Ihekweazu, C., Kobinger, G., Lane, H. C., Memish, Z., Oh, M. D., Sall, A. A., Schuchat, A., Ungchusak, K. and Wieler, LH. COVID-19: Towards controlling a Pandemic. *The Lancet*. 2020; 395(10229):1015-1018.
8. WHO-Africa. African countries move from COVID-19 readiness to response as many confirm cases. World Health Organization, Africa [cited 2020 06/04] Available from: <https://www.afro.who.int/health-topics/coronavirus-covid-19>.
9. NCDC. “First case of corona virus disease confirmed in Nigeria”. Nigeria Centre for Disease Control [cited 2020 06/04]. Available from <https://ncdc.gov.ng/news/227/first-case-of-corona-virus-disease-confirmed-in-nigeria>.
10. Gilbert M, Pullano G, Pinotti F, Valdano E, Poletto C, Boëlle PY, D’Ortenzio E, Yazdanpanah Y, Eholie SP, Altmann M, Gutierrez B, Kraemer MUG, and Colizza V. *Lancet*. 2020;395(10227):871-877.
11. World Economic Forum, 2020. <https://www.weforum.org/agenda/2020/03/why-sub-saharan-africa-needs-a-unique-response-to-covid-19/> accessed at 1:06 pm 4/16/2020
12. WHO Africa. “Nigeria’s Polio infrastructure bolster COVID-19 Response”. [cited 2020 05/04]. World Health Organization- Africa. Available from: <https://www.afro.who.int/news/nigerias-polio-infrastructure-bolster-covid-19-response>.
13. Channels TV, 2020. “Buhari Orders Total Lockdown of Lagos, Ogun and Abuja”. [cited 2020 05/04]. Available from: <https://www.channelstv.com/2020/03/29/breaking-buhari-imposes-curfew-in-lagos-ogun-and-abuja/>.
14. NCDC. “Case Summary in Nigeria as at April 8th 2020”. [cited 2020 08/04]. Nigeria Centre for Disease Control Available from: <https://covid19.ncdc.gov.ng/>.
15. Song F, Shi N, Shan F, Zhang Z, Shen J, Lu H, et al. Emerging coronavirus 2019-nCoV pneumonia. *Radiology* 2020; 295(1):210-217.
16. Kampf G, Todt D, Pfaeder S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and its inactivation with biocidal agents. *J Hosp Infect* 2020; 104(3):246-251.
17. Omoleke SA, Mohammed I, Saidu Y. Ebola viral disease in West Africa: a threat to global health, economy and political stability. *J Public Health Afr* 2016;7(1)534.
18. WHO. Emergency ministerial meeting on COVID-19 organized by the African union and the Africa centres for disease control and prevention. [cited 2020 05/04]. <https://www.who.int/dg/speeches/detail/emergency-ministerial-meeting-on-covid-19-organized-by-the-african-union-and-the-africa-centres-for-disease-control-and-prevention>.
19. Africanews. Coronavirus - Africa: 46 countries reporting a total COVID-19 2,746 cases, 72 deaths, as of 9:30 am EAT – 26 March 2020. [www.africanews.com/2020/03/26/coronavirus-africa-46-countries-reporting-a-total-covid-19-2746-cases-72-deaths-as-of-930-am-eat-26-march-2020/](http://www.africanews.com/2020/03/26/coronavirus-africa-46-countries-reporting-a-total-covid-19-2746-cases-72-deaths-as-of-930-am-eat-26-march-2020/)