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Global Lessons of COVID-19: Nigerian Perspective

Elemuwa CO^{1*}, Elemuwa GU², Omoregie R³, Adebowale Ayo S⁴, Akpan Emma⁵ and Olaniyan Oluwatobi⁶

¹National Primary Healthcare Development Agency, Nigeria

²Pharmacovigilance Directorate, National Agency for Foods and Drugs Administration (NAFDAC), Nigeria

³Medical Microbiology Division, University of Benin Teaching Hospital, Nigeria

⁴Department of Epidemiology and Medical Statistics, University of Ibadan, Nigeria

⁵Alliance for Sustainable Development Initiative, Nigeria

⁶Healthcare Strengthening Initiative (HCSI), Nigeria

*Corresponding author: Elemuwa CO, National Primary Healthcare Development Agency, 2, Uke Street, off -Ahmadu Bello Way, Area 11, Garki, Abuja, Nigeria.

To Cite This Article: Elemuwa CO, Elemuwa GU, Omoregie R, Adebowale Ayo S, Akpan Emma and Olaniyan Oluwatobi. Global Lessons of COVID-19: Nigerian Perspective. Am J Biomed Sci & Res. 2023 19(2) AJBSR.MS.ID.002569, DOI: [10.34297/AJBSR.2023.19.002569](https://doi.org/10.34297/AJBSR.2023.19.002569)

Received: 📅 June 09, 2023; Published: 📅 June 23, 2023

Abstract

COVID-19 is an ongoing pandemic forcing governments worldwide to develop global standard control measures from travel restrictions, lockdowns or curfews, workplace risk management, the closure of public spaces; basic hygiene, social distancing to the use of facemasks; with increasing demand for care, challenging health systems and teaching multiple lessons which are documented in this paper. The COVID-19 pandemic has been unprecedented in several ways. It has affected lives, the economy of our country, travel, and social interactions. This has required a complete re-routing of our public health resources to prize-fight one disease. While building during a pandemic, has led to the achievement of several milestones, there is no doubt that the world could have been better prepared if we invested more in pandemic preparedness. Therefore, we are seizing this moment of commotion to build more sustainable and resilient systems for health security in Nigeria. A holistic scoping review was carried out to map the challenges, burden, and significant lessons from the COVID-19 pandemic appropriately documented thus far, as well as various preventive interventions (pharmaceutical and non-pharmaceutical medications e.g., vaccination, safe hygienic practices, social distancing, use of facemasks and border closure) adopted. Importance of infection prevention and control (IPC) as well as inestimable values of water in the environment have been diametrically established. The lessons from COVID -19 were enormous, provided reasons to reshape our public health systems and global health security. This is a time for a paradigm- shift!

Introduction

The COVID-19 pandemic is an ongoing infectious disease that has spread to over 188 countries worldwide, with over 359,561,245 reported cases and 5,635,677 deaths as of January 26, 2022 [1]. The disease was reported to have originated in Wuhan, China, and the pathogenicity was defined as a novel coronavirus, Severe Acute Respiratory Syndrome (Coronavirus 2 SARS CoV2). This disease is consistent with the previously identified SARS-CoV and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV); the outbreak was declared a Public Health Emergency of International Concern

on 30th January 2020 and a pandemic on 11th March 2020 by the World Health Organization. Consequently, governments worldwide have been forced to develop global standard control measures which include travel restrictions, lockdowns or curfews, workplace risk management, the closure of public spaces such as bars and clubs, restaurants, fitness centers, and educational institutions, basic hygiene, social distancing and the use of facemasks. Despite these countermeasures, the incidence rate continues to rise globally, with the Americas, Europe, and South-East Asia bearing the brunt of the burden.



SARS-COV-2 Virus Variants

Viruses grow and mutate as they spread from person to person with time and when these mutations differ greatly from the original virus, they are referred to as “variants.” Viruses progress as changes in the genetic code due to genetic mutations occur during the genome’s replication. Scientists analyze the genetic material of viruses (sequencing) and then examine for variations between them to determine if they have mutated to find variants. Therefore, the SARS-CoV-2 virus has consistently mutated, resulting in variants that are different from its original form. Variants of the SARS-CoV-2 virus, which produces COVID-19, have emerged and been identified in parts of Europe, America, and Southern Africa which eventually spread across borders including Nigeria, since the virus’s global spread.

The present global epidemiology of SARS-CoV-2 is distinguished by the prevalence of the Delta variation, a decreasing tendency in the number of Alpha, Beta, Gamma, Epsilon, Iota, Kappa, and Delta variants, and the emergence of Omicron, which was recognized as a variant of concern (VOC) by WHO on November 26, 2021.

Global Context (Burden) of the Covid-19 Pandemic

Asian Context of the COVID-19 Pandemic

The COVID-19 outbreak began in Asia, in Wuhan, Hubei, China, with over 96,451,533 reported cases and over 1,282,785 deaths reported in the region and has since spread throughout the world, except for North Korea and Turkmenistan. India, Turkey, Iran, and Indonesia have the highest number of reported coronavirus infection in Asia, as at 17 July, 2020 [1]. Despite being the first region of the world to be affected by the pandemic, certain Asian governments, particularly Bhutan, Singapore, Taiwan, and Vietnam have fared well as a result of their early widespread response [2].

European Context of the COVID-19 Pandemic

The first case in Europe was reported on January 24, 2020, in Bordeaux, France. On March 13, 2020, the World Health Organization (WHO) declared Europe to be the active center of the COVID-19 pandemic after the number of confirmed new COVID-19 cases in Europe surpassed that of China [3,4]. On May 22, 2020, the WHO reported that South America was experiencing a severe epidemic [5]. By March 17, 2020, all European countries had confirmed cases of COVID-19, with Montenegro being the last European country to disclose at least one case [6]. Every European country, except the Vatican City, has recorded at least one death. On January 31, England reported the first two cases [7]. Since then, many confirmed cases were discovered in the United Kingdom. The UK government enacted precautionary steps to counter the transmission of infections, such as contact tracing, quarantine, and screening, some of which were linked to the Italy clusters. The NHS established drive-through testing centers at many hospitals to investigate members of the general population who had symptoms. This initiative

was eventually superseded with screening aimed at diagnosing people in outpatient clinics.

American Context of the COVID-19 Pandemic

The index American case was confirmed in the USA on January 20, 2020, while the first known fatalities occurred in February, and on March 13, 2020 President Donald Trump declared the epidemic a public health emergency in the United States of America. By mid-April, all state and territory governments had declared an emergency due to increases in cases. Following the relaxation of limitations in some areas, a second wave of infections occurred in June, with daily cases exceeding 60,000. By mid-October, the third wave of illnesses had begun; there were approximately 200,000 new cases per day throughout parts of December 2020 and January 2021 [8] and over 85,992,813 reported cases and 1,301,826 deaths were reported in North America and over 46,523,429 and over 1,207,085 deaths were reported in South America [1].

African Context of the COVID-19 Pandemic

The region confirmed its first case of COVID-19 in Egypt on February 14th, 2020, and the first case from Sub-Saharan Africa was reported in Nigeria on February 27th, in an Italian patient who went to Nigeria from Italy on February 25th, 2020 [9,10]. As of April 18, 2020, 10:00 a.m. CEST, the Africa CDC recorded 19,895 confirmed cases, including 1,017 deaths and 4,642 recoveries, from 52 African countries, with only two countries (Comoros and Lesotho) remaining virus-free [11]. Surprisingly, the majority of COVID-19 cases in Africa have been imported from Europe and the United States, rather than from China, the original COVID-19 center [12].

Nigerian Context of the COVID-19 Pandemic

According to the Nigerian Centre for Disease Control [13], Nigeria reported an index case of COVID-19 on February 27, 2020, making it the first in Nigeria and West Africa. As a result, multiple states imposed a lockdown and curfew to slow the virus’s spread. Except for those on essential roles, all residents stayed home and practiced good basic hygiene; domestic and international travel was constrained; enterprises, workplaces, public events and parties (including houses of worship as well as sporting events), and educational facilities were shut. According to the NCDC, as of August 1st, 2020 [13] over 286,000 tests, 43,537 confirmed positive cases, 22,567 active cases, 20,087 discharges, and 883 deaths had been reported throughout 36 states in the country, as well as the Federal Capital Territory (FCT), Abuja. As of the 12th of October 2021, across the 36 states and the Federal Capital Territory, 208153 cases have been confirmed, 195936 cases have been discharged, and 2756 deaths have been recorded.

Economic Impact of COVID-19 Globally

The coronavirus pandemic has spread to nearly every country on the planet. Its expansion has left economic systems and companies weighing the costs, as governments try to implement addi-

nal lockdown measures to combat the virus's spread. Despite the discovery of new vaccinations, many people are still unsure about what recovery could look like. Large changes in stock markets, where businesses' shares are purchased and sold, can have an impact on the value of pensions or individual savings accounts (ISAS). As the number of Covid-19 cases increased in the early months of the pandemic, the FTSE, Dow Jones Industrial Average, and Nikkei all fell precipitously. Economically, the impact of COVID-19 is felt globally in:

Rising Unemployment

Many people have lost their employment or had their wages reduced. Across major economies, unemployment has risen. According to the International Monetary Fund (IMF), the proportion of persons out of work in the United States reached an annual total of 8.9 percent, signalling the end of a decade of employment growth. Job openings in Australia have recovered to the same level as in 2019, while in France, Spain, the United Kingdom, and numerous other nations, they have fallen.

Majority of Countries in Recession

When the economy expands, more revenue and new employment are created. It is calculated by examining the percentage change in gross domestic product, or the value of goods and services produced, during a three-month or a year. According to the IMF, the world economy would contract by 4.4 percent in 2020 and this decrease is the greatest since the Great Depression of the 1930s.

The Travel Industry

The travel sector has been severely harmed, with airlines cancelling flights and people cancelling business and vacation trips. New variants of the virus, identified only recently, have compelled several nations to impose stricter travel restrictions. According to data from the aircraft tracking firm Flight Radar 24, the number of flights worldwide dropped dramatically in 2020 and is still far from recovering.

The Hospitality Industry

Millions of jobs have been lost in the hospitality industry, and many businesses have gone bankrupt. Data from Transparent, an industry-leading intelligence firm that covers over 35 million hotel and rental listings globally, shows a drop in reservations in all of the main tourist locations.

Impact of COVID-19 on the Nigerian Economy

In January 2021, the World Bank predicted that the COVID-19 issue will cause an extra 10.9 million Nigerians to fall into poverty by 2022, defined as individuals living below the national poverty threshold of roughly \$1 per day. For instance, high levels of urban poverty in Lagos State - the majority of the state's more than 20 million citizens live in slums or informal settlements-made individuals exposed to the economic effect of the pandemic. The eco-

nomically impact of the pandemic has highlighted the significance of the right to social welfare, which compels states to take a variety of measures, including unemployment compensation, cash transfers, and food aid, to guarantee people have a sufficient quality of life. According to the latest figures from Nigeria's statistics office, the country's GDP fell by 6.1 percent year on year in the second quarter of this year. The drop comes after thirteen quarters of solid but slow growth. The -6.1 percent drop is also the steepest in Nigeria in the previous ten years. The steep reduction in Nigeria's GDP growth, like that of most other countries across the world, is primarily due to a halt in economic activity following the country's lockdown in April to combat the spread of the virus. Following the pandemic, the World Bank forecasted a -3.2 percent reduction in 2020, a five-percentage point decrease from their prior forecasts.

Global Lessons of the COVID-19 Pandemic

COVID-19 highlights the importance of monitoring new narratives and effective governance power structures. When nations succeed in addressing national difficulties, they develop national identities and systems that are compatible with local identities and systems. Citizens in successful nation-states understand when it is appropriate to sacrifice their liberty to larger groupings. The worldwide pandemic re-enforces this dilemma on a global scale. It beckons us to create new narratives in which our national connections are complemented by a global allegiance-the allegiance to our common humanity, which must conquer this pandemic together. While our international institutions are sensitive to undermining by the privileged few seeking their narrow benefit, the pandemic beseeches us not to abandon them, but to reform them to serve human needs and purposes in response to global challenges. This insight requires us to go beyond our present economic ideologies. It does not support unrestricted free markets or centralization, nor does it support pure autonomy or collectivism. Instead, it urges us to mobilize our efforts-both individual and communal-at the magnitude that our difficulties require. It does not support winged politics. Instead, it aims to equip everyone to contribute to the achievement of these core goals, several of which are social in nature. Allowing the freedom to create a successful, safe, equitable, and sustainable world is what it implies.

The COVID-19 pandemic also exposes our existence and compels us to consider our most basic wants and maximum values. It pushes us to recognize the genuine worth of many people whose responsibilities in society are often overlooked: nurses, hospital orderlies, persons working at grocery checkout counters, delivery personnel, and the countless random individuals who impulsively offer assistance to the elderly and vulnerable. The pandemic has disclosed a huge mass of generosity and kindness in our communities all over the world. It has resulted in several acts of genuine heroism in inpatient settings. It has prompted many of us to employ our best strengths for our greatest objectives, giving our lives unique and thrilling significance [14].

The Nigerian Perspective

Effective Governance

Nigeria may learn a lot from the COVID-19 pandemic in terms of governance. It underlines the value of structural equilibrium of effectiveness and resilience to encourage change to a better and more sustainable economy and society. It is believed that the COVID-19 experience will prompt the Nigerian government to prioritize the development of infrastructure (physical and socio-economic) in the country to protect lives, livelihoods, and business continuity. Informed decisions for the public should be driven by risk evaluation because citizens require trustworthy and actionable information to enable them to understand their chance of being exposed and act responsibly. Measures (e.g. finance, materials, and training) to strengthen Nigeria's long-neglected social infrastructures will necessitate local and international collaboration.

Health Sector

The COVID-19 experience is believed to impact public and private healthcare institutions in making better-informed decisions toward building capacity through effective leadership from all three levels of government, adequate health financing, proper training, technical assistance, and mobilization of the health workforce, improved service delivery through the provision, allocation and equitable distribution of medical supplies and facilities, and regulatory frameworks.

Community Health Promotion

It is critical to assure overall improvement in the process of empowering individuals to take charge of and improve their health, as it shifts away from a focus on individual behaviour and toward a wide range of psychosocial interventions. Using broad and positive health concepts, participation and involvement, action and action competence, setting perspective and equitable health, activities focused on health promotion such as communication and raising awareness about healthy behaviours for the general public through public service announcements, health fairs, mass media campaigns, and newsletters, while taking key principles such as community participation, partnership, empowerment, and equity into account.

Communication Sector

To avoid fake news and faux outrage, awareness across all channels (e.g., mass media, town criers, trade unions, and associations) is crucial. The covid-19 pandemic emphasizes the importance of improving various segments of the communication sector through efficient usage of multiple channels of information flow for varied audiences to provide smooth transmission of information to the public. Communication organizations, for example, might collaborate with health institutions to make it easier to disseminate vital health information, health education, and health promotion in general.

Education Sector

Primary, secondary, and tertiary schools in Nigeria were closed, affecting millions of students at tertiary institutions whose semesters were cancelled or halted due to the crisis. While many other nations have transitioned to digital classrooms, many higher institutions in Nigeria lack the different online learning platforms or resources for this approach to teaching [15] significantly exacerbating the situation for students across the country. Several research shows that when exposed to a public health emergency and academic disruptions, students' mental health suffers significantly [16].

Transport Sector

This pandemic has posed an existential danger to the travel industry, and the primary motivation is survival. Many enterprises will either fail to survive the protracted stoppage of travel or will be unable to compete in the developing controlled, scaled-down market. However, one thing has become evident. Any travel firm seeking to recover should be conscious that how they handled COVID-19 will be regarded. Cancellations, rebooking, and credit issuing have progressed from a reactive crisis management issue to a major national and legally protected consumer rights concern. Reputation and recovery will go hand in hand, therefore destinations and businesses must ensure that they have a plan in place for communicating accurately, on time, and empathically with their customer base [17].

Palliation

To alleviate the effects of the lockdown, the Federal Government of Nigeria rolled out palliative measures in the form of food and cash distribution (stimulus packages) for targeted groups, especially the most vulnerable population; three months of interest holidays for those holding Tradermoni, Marketmoni and Farmermoni loans issued by the Bank of Industry, Bank of Agriculture and the Nigeria Export and Import Bank respectively. However, the process for the distribution of these stimulus packages was reportedly politicized and later hijacked by hoodlums obstructing the most vulnerable in the society from benefiting from them.

Health Systems

Disruptions of the delivery of health care for all conditions caused by fear, stigma, misinformation and limitations on movement compounded the situation. Overwhelmed systems invariably led to both direct mortality from the outbreaks and indirect mortality from preventable and treatable conditions that increased dramatically. COVID-19 and Nigeria: not all gloomy! COVID-19 provided an opportunity to strengthen the systems. Revealed true pictures of the health system to the attention of political players - Laboratory, intensive care units, isolation centers, built capacity and knowledge on the importance of IPC measures and practices, Local health care support industries sprang up, allowed use of existing disease-spe-

cific structures and systems to respond to COVID-19, Opportunities to improve our tools, guidelines, standards, and systems holistically, Innovative strategies to improve access e.g. PPMV, meetings, and learnings have been digitalized. Furthermore, mathematical modelling indicates that large service disruptions in Nigeria have the potential to leave 6,202,200 children without oral antibiotics for pneumonia, 4,988,600 children without DPT vaccinations, 725,900 women without access to facility-based deliveries, 2,071,600 fewer women receiving family planning services. As a result of disruptions in all essential services, child mortality in Nigeria could increase by 18% and maternal mortality by 9% over the next year.

Possible Recommendations: Integrating Pharmaceutical & Non-Pharmaceutical Interventions

There are various types of strategies set in place and have been grouped in to two-pharmaceutical and non-pharmaceutical interventions.

Pharmaceutical Interventions

NAFDAC approved COVID-19 vaccines: COVID-19 vaccine is a vaccine intended to provide acquired immunity against severe acute respiratory syndrome coronavirus 2 (SARS CoV 2), the virus that causes coronavirus disease 2019 (COVID-19). Before the COVID 19 pandemic, an established body of knowledge existed about the structure and function of coronaviruses causing diseases like severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). This knowledge accelerated the development of various vaccine platforms in early 2020 [18]. However, the National Agency for Food and Drug Administration and Control (NAFDAC) in Nigeria has approved certain vaccines which have proven to be effective in the prevention of COVID-19.

- i. Astrazeneca/Oxford COVID-19 Vaccine [19].
- ii. Pfizer-BioNTech COVID- 19 vaccine also (an mRNA vaccine) [20].
- iii. Moderna (Rovi Pharma Madrid, Spain) AstraZeneca AZD1222 [SK Bioscience Co Limited (Republic of Korea)] Sputnik V (Gamaleya National Centre of Epidemiology and Microbiology, Russia) [21].

Adjunctive therapies: An immunological adjuvant is a substance formulated with a vaccine to elevate the immune response to an antigen, such as the COVID 19 virus or influenza virus [22]. Specifically, an adjuvant may be used in formulating a COVID 19 vaccine candidate to boost its immunogenicity and efficacy to reduce or prevent COVID 19 infection in vaccinated individuals [22,23].

This includes:

- i. Immunomodulation agents or anti-cytokine
- ii. Immunoglobulin therapies(recovering anti-bodies from recovered patients)

- iii. Immune boosters such as vitamins D, C, and B complex, zinc and quercetin.
- iv. Aluminum salts, known as “alum”, were the first adjuvant used for licensed vaccines, and are the adjuvant of choice in some 80% of adjuvanted vaccines.
- v. Corticosteroids decrease the host inflammatory responses in the lungs and acute respiratory distress syndrome.

Non-pharmaceutical interventions (NPIs)

NPIs have played a critical role in reducing transmission rates and the impact of COVID-19. Until a safe and effective vaccine is available to all those at risk of severe COVID-19 disease, NPIs will continue to be the main public health tool against SARS-CoV-2. Most NPIs can have a negative effect on the general well-being of people, the functioning of society, and the economy. Therefore, their use should be guided by data on the local epidemiological situation, with the overall goal of protecting the most vulnerable individuals in society. [24].

- i. Advise the public to voluntarily self-isolate if they have COVID-19-related symptoms. This is a critical step in lowering the incidence of secondary infections.
- ii. Easy access to testing and quick contact testing, testing of high-risk contacts regardless of symptoms, and contact quarantining.
- iii. Closing specific businesses, such as those in areas where people have limited physical distance, may be more successful than closing all businesses.
- iv. Environmental precautions, such as regular cleaning of commonly touched surfaces and proper ventilation of indoor areas, can reduce the risk of disease transmission in the community.
- v. Reducing the size of outdoor and indoor meetings reduces the risk of SARS-CoV-2 spreading to big segments of the population.
- vi. Depending on the underlying epidemiological situation, broader organizational steps such as event cancellations, deferral, or re-arrangement should be considered.
- vii. Boosting teleworking wherever possible can help to reduce the risk of workplace incidences.
- viii. Because of their considerable influence on both society and individuals, stay-at-home policies are a last-resort alternative and should be thoroughly considered before being implemented. Tailored implementation is preferable, both regionally and economically, and might be considered to control epidemics that are not responding to conventional approaches.

Conclusion

The COVID-19 pandemic has been unprecedented in several

ways. It has affected lives, the economy of our country, travels, and social interactions. This has required a complete re-routing of our public health resources to fight one disease. While building during a pandemic, has led to the achievement of several milestones, there is no doubt that the world could have been better prepared if we invested more in pandemic preparedness. Therefore, we are seizing this moment of commotion to build more sustainable and resilient systems for health security in Nigeria. The COVID-19 pandemic highlighted the importance of freedom-the freedom to move, be with those we love, and live in decency and security-for ourselves and those around us, from our loved ones to refugees and the dispossessed. Above all, it highlighted the significance of realizing the ultimate meaning of all of our businesses and economies, national parties and authorities, local civil society organizations and international institutions, accepted practices and beliefs, and other systems: to serve sentient needs and purposes. It clearly showed that our institutional, governmental, and societal structures can only satisfy our goals and priorities if they influence us to cooperate on a large enough scale. And this aspiration pushes the development of all of our systems. Any new infectious disease is a cause for concern, and COVID-19 is no exception. There is still a lot for us to do in preparing for outbreaks, as we must be ready to handle the best and worst cases. Preparedness requires not only emergency funding but also stable and sustainable financing for national public health institutions and the other agencies involved in preparedness and response. We will continue putting in our best efforts to control the acute phase of the COVID-19 pandemic, and other outbreaks that follow in the future. Disruptions of the delivery of health care for all conditions caused by fear, stigma, misinformation and limitations on movement compounded the situation. Overwhelmed systems invariably led to both direct mortality from an outbreak and indirect mortality from preventable and treatable conditions increased dramatically. Disruptions witnessed from both supply and demand side factors - Supply -large numbers of health care workers becoming ill or died, Facilities getting overwhelmed with large numbers of cases, disruption of essential supplies and equipment from production, shifting to the epidemic/pandemic related supplies. In the demand side, people used fewer essential services during the pandemic due to lockdowns or other mobility restrictions, people less likely desired care due to fear of being exposed to the infective agents. The pandemic demonstrated the importance of infection prevention and control (IPC) as well as the inestimable values of water. The lessons from COVID -19 were enormous, provided reasons to reshape our public health systems and global health security. This is a time for a paradigm- shift!

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