

Review of COVID-19 Pandemic, Factors Associated with the Spread and Containment Challenges within Four Months of the Outbreak in Nigeria

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Abstract

The COVID-19 outbreak which started in the Hubei province of China in December 2019 has assumed the new acme of life-threatening infection ravaging all countries in the world today. In Nigeria, attention has not been paid to understand factors that associated with the outbreak and initial spread of the virus which made containment difficult. This study aimed at exploring the factors associated with the spread of COVID-19 in Nigeria and way forward for future epidemic preparedness. Data for the study were generated through an electronic literature search in PubMed/Medline, Google Scholar, Scopus database, magazines, Newspapers, and grey literature focusing on the COVID-19 pandemic. The trends of the spread were assessed using graphs and bar charts. Factors such as Nigeria weak health system, porous border, lack of isolation centers, misinformation, conspiracy theory among others with its association to spread and containment challenges of COVID-19 were discussed. The study further presented its implications for future epidemic preparedness. Thus emphasizes the urgent need for Nigerian government to adequately equip health sector, properly kits health workers and equally establish isolation centers across the 36 states of the country. Also ensure better protection of trans-border migrations to eliminate further spread and contain future outbreak since all these viruses are being imported into the country.

Keywords: COVID-19 • Containment challenges • Factors associated with the spread • Future epidemic preparedness

Introduction

The COVID-19 outbreak which started in the Hubei province of China in the late December 2019 has assumed the new acme of life-threatening infection in the 21st century. The novel COVID-19 which was declared a pandemic by World Health Organization (WHO) on the 11th March 2020, due to its devastating effect across countries globally is rapidly evolving and has affected over 210 countries, Nigeria inclusive [1]. From 31 December 2019 and as of 15 May 2020, that is four months and two weeks

of the outbreak, over 4338658 cases of COVID-19 have been reported globally, with a total of 297119 mortalities [2]. In the African countries the COVID-19 outbreak in the region is not different hence the novel virus has continued to surge with 54190 verified cases and 1623 deaths within the four months of the outbreak in the region [3]. However, while many African countries were recording relatively fewer cases, Nigeria has 5445 confirmed cases and 171 deaths within the same period [4].

In Nigeria, the first confirmed case of the disease was detected on February 27, 2020, following the return of an Italian (male) to Lagos State airport on February 25, 2020, on a flight from northern Italy, and had subsequently traveled from Lagos to Ogun State, western Nigeria, where he became ill and was promptly isolated in Lagos [5]. The outbreak of the novel virus in Lagos which is the biggest city in Nigeria with a very large population, triggered panic among the individuals and authorities in the country that the disease may circulate rapidly due to the Country's weak health systems. Nevertheless, the National Emergency Operations Centers (NEOC) following the report of the first case immediately commenced the trace of his contacts. The contact tracing report revealed that a total of two hundred and seventeen (217) persons had contact with the index case out of which, forty-five travelled out of Nigeria, while one hundred and seventy-two (172) remained in the country. Sixty-nine (69) out of the one hundred and seventy-two contacts (172) were found in Lagos, Forty (40) in Ogun state, fifty-two (52) in other states and eleven (11) in an unknown location [5].

In line with recommended practices, the contacts were subjected to COVID-19 test by the Federal Ministry of Health, and on March 8, 2020, one of the tested contacts to the index case was found to be positive. With this report the number of COVID-19 cases in Nigeria increased to two and thus marked the beginning of the spread of COVID-19 in the country. Consequently, as more tests were initiated more cases were reported in the country to the tune of 5445 confirmed cases and 171 deaths as at 15 May 2020 [4]. From this date the number of cases continued to grow exponentially as local transmission surged relative to the number of imported cases [5].

Sequel to the above sorry situation, the Federal Government of Nigeria initiated some of the major strategic responses to attenuate the spread of COVID-19 pandemic in the Country. The strategic measures includes declaration of lockdown in Nigeria on 30th March, 2020 as people were forced to maintain social distancing, regular hand washing and use of sanitizers, use of face mask in public and good reparatory hygiene [1]. Also as number of cases surged, other control measures were enforced such as closing the Nigerian borders and travel ban on 13 high-risk countries [6]. Again as some other states across the country reported the outbreak of the novel virus, various degrees of lockdown were also carried out in all the 36 states in the country. This lockdown directive involved the closing down of all schools, both primary, secondary, tertiary institutions and government

Table 1. The Major Containment Strategies Government Adopted to attenuate the spread of COVID-19 pandemic in Nigeria.

The Step-by-Step Strategies Adopted by Nigerian Government to Mitigate the Spread of Coronavirus (COVID-19) pandemic in the Country since the outbreak of the Index Case						
COVID-19 Outbreak	Step One	Step Two	Step Three	Step Four	Step Five	Step Six
First Confirmed Case on 27th March 2020	March 9, Presidential Task Force for COVID-19 Commissioned	March 18, Federal Govt. order for cancellation of national sports festival and suspension of the ongoing orientation course for the 2020 Batch 'A' corps members. March 19, closure of all the schools in the country [8].	March 19, Ban of gathering of not more than 20 and religious gathering of not more than 50 persons	March 30 Lockdown order was issued for Lagos, FCT & Ogun State	April 2, More states go into lockdown beginning from Bauchi State follows by other states in the country	March 18, Travel Ban on 13 high-risk countries, March 23 international Flight Banned, April 20 domestic flight banned, May 6 domestic and international flight extended to June 7

parastatals. Also bans on religious and social gatherings involving more than 20 persons, restrictions on businesses activities, social distance plan for incoming travelers among others [7]. Within the fortnight of the previous restrictions another declaration came that there should not be any social gathering of any kind and due to this instruction, there were many cancellations of social events like burial, wedding, birthday, naming, congregational prayers, convocation ceremony. Also the institution of taskforce by both federal and state governments to ensure complete compliance, and to ensure that people in their respective states do not default the lockdown order as you can see in Table 1.

The main worry of this paper was to unveil those factors that militated against the effective control of the disease in the country especially at the early stages of its outbreak. This is important because COVID 19 is a deadly disease which spreads easily and can cause death of vulnerable people. From all indications the disease has come to stay and thus there is need to understand factors that impeded its control in the country. An understanding of these factors will open up the need for more effective means of combating the disease in the future. The federal government, NCDC and all other stakeholders who are responsible for the fight against COVID19 will find this study interesting, as this will present facts that will enable them understand those factors associated with the spread of the novel virus and containment challenges from the onset of the outbreak, hence plan better for the control of the novel COVID 19 pandemic and for future epidemics outbreak in the country [8-10].

Materials and Methods

This review was conducted using both peer reviewed and grey literature focusing on research evidences derived from COVID-19 pandemic especially in Nigeria. An electronic literature search was conducted in PubMed/Medline, Google, Google Scholar and Scopus database, including magazines and Newspapers from 28 February the index case was detected in Nigeria to 15 May 2020 as of this writing, to retrieve relevant articles for the study. The following keywords were used for the search: COVID-19 pandemic, causes of COVID-19 pandemic, factors influencing the spread of COVID-19, prevention and control measures of COVID-19, future epidemic preparedness, and search was limited to English language articles. Full text articles that provide information on the subject matter were fully evaluated. Reference lists of published articles (including documents on databases such as WHO, CDC, NCDC and ECDC) were scanned for potential data that was used for both graphs, bar chat and the text. The data were used to describe the trends of occurrence of COVID-19 in Nigeria, and factors associated with the spread and containment challenges. The lessons learnt were used to suggest for future epidemic preparedness. The narrative review method was chosen since this article sought to evaluate,

summarize, and clarify literature on the factors associated with the COVID-19 spread and its containment challenges in Nigeria.

Literature Review

Epidemiological facts of coronavirus 2019 (COVID-19)

COVID-19 which belongs to the genus of coronavirus COVs, the family Coronaviridae, and Nidovirales, SARS, H5N1, H1N1 and MERS, is well known to have been occurring hence the current outbreak of COVID-19 is not the first time. Studies have observed that coronavirus causing an epidemic has been a significant global health threat. As in November 2019, an outbreak of Coronaviruses (CoVs) with Severe Acute Respiratory Syndrome (SARS)-CoV started in the Chinese province of Guangdong, also in September 2012 the Middle East Respiratory Syndrome (MERS)-CoV appeared [11-14]. The 21st-century SARS-COV-2, which is responsible for COVID-19 infection, has been the deadliest of the 21st century virus. The COVID-19 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. The time frame for its incubation is approximately 1 day to 14 days. The symptoms include cough, fever and shortness of breath, and it is diagnosed through a laboratory test [15]. The effect of COVID 19 could lead to serious health consequences such as breathing difficulties or fatalities, especially among the old and individuals with existing severe illnesses. Some individuals affected with the virus may not present any symptom but remain carriers of the virus while some show minor symptoms and then overcome the disease [16]. Studies have indicated that the transmission of COVID-19 was very fast regarding its transmission to different countries after its first appearance in China [17]. In Nigeria, the outbreak of the novel virus took a new dimension as at May 2020 when the NCDC reported an upsurge in the number of cases in almost all the states in the federation [14,18].

Graphical presentations of COVID 19 pandemic in nigeria by state and death rate during the first few months of the outbreak

The graphs above represented the data on the upsurge in the reported cases of COVID-19 day to day and death rate across the country (Figures 1-7). The graphs indicated that despite the control measures adopted by both Federal and State government to mitigate the spread of COVID-19 within four months, the novel virus continued to evolve rapidly in the country. World Health Organization (WHO) had warned that African countries including Nigeria stand a high risk of recording not less than two hundred and fifty (250) million cases and up to two hundred thousand (2,00,000) fatalities of COVID 19 if the disease is not adequately controlled [19-21]. These in the main have informed the decisions to examine

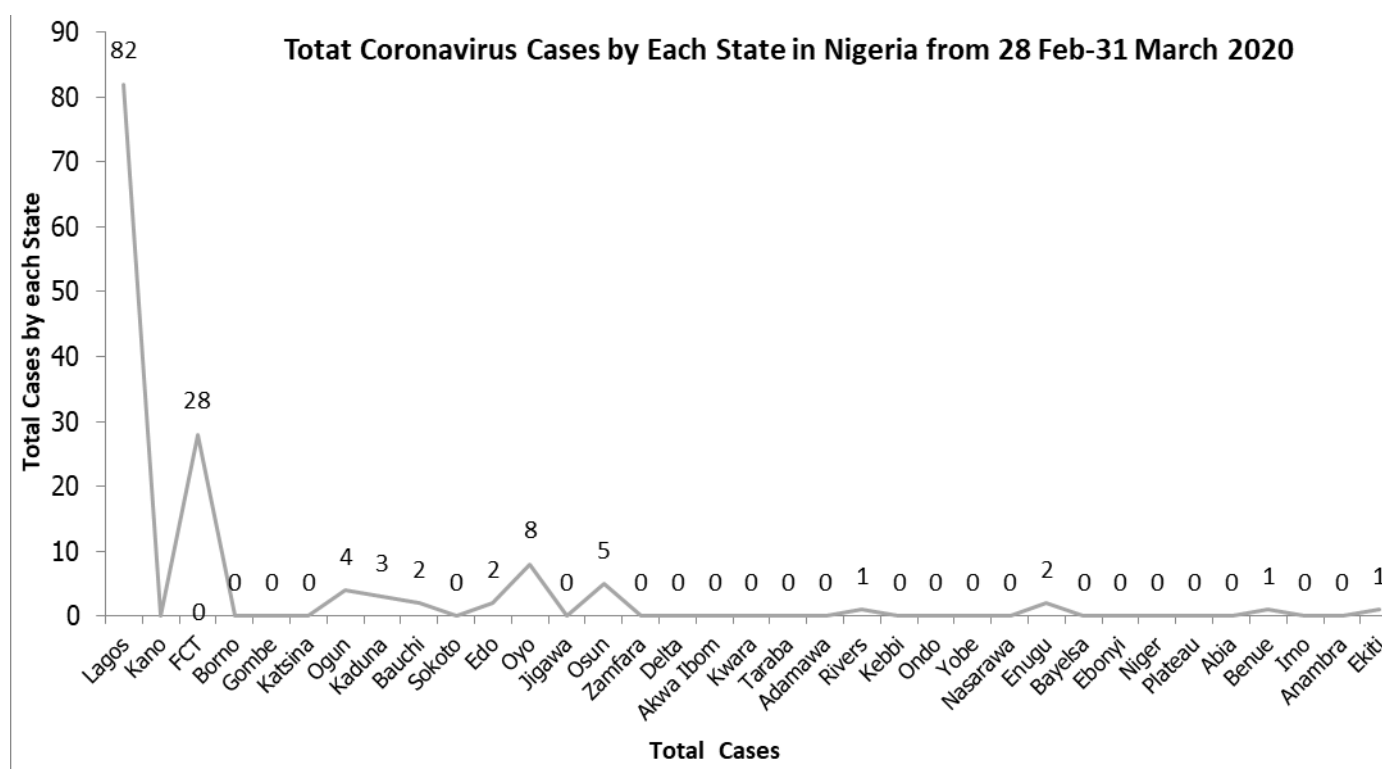


Figure 1. Total COVID-19 confirmed cases by each state in Nigeria starting from 28 February 2020, when the index case was recorded to 31 March 2020.

Total Coronavirus Cases by Each State in Nigeria from 1 April- 15 May 2020

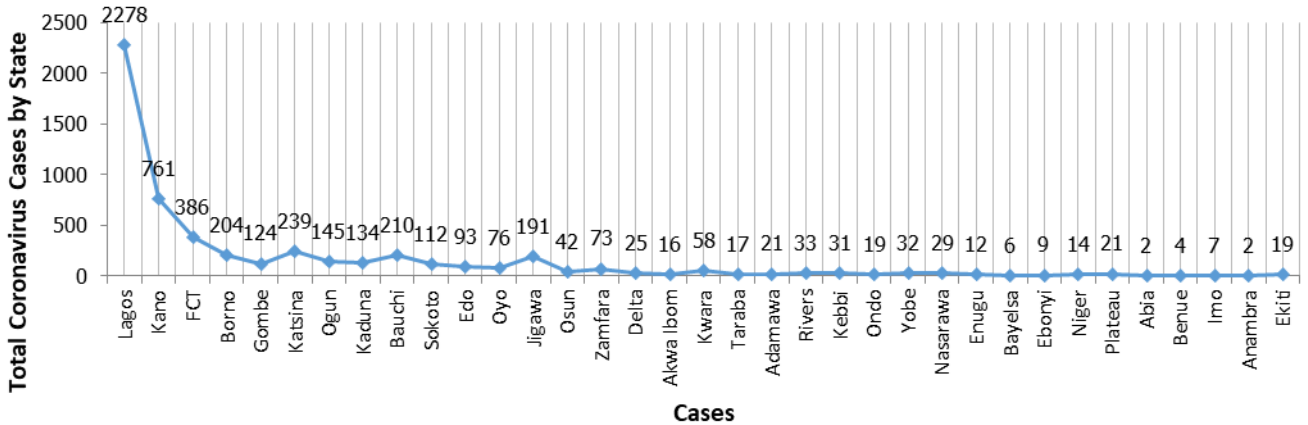


Figure 2. Indicated the cumulative growth of COVID-19 confirmed cases by each state in Nigeria starting from 1st April to 15 May 2020.

Coronavirus Daily New Cases in Nigeria from 28 Feb- 31 March 2020

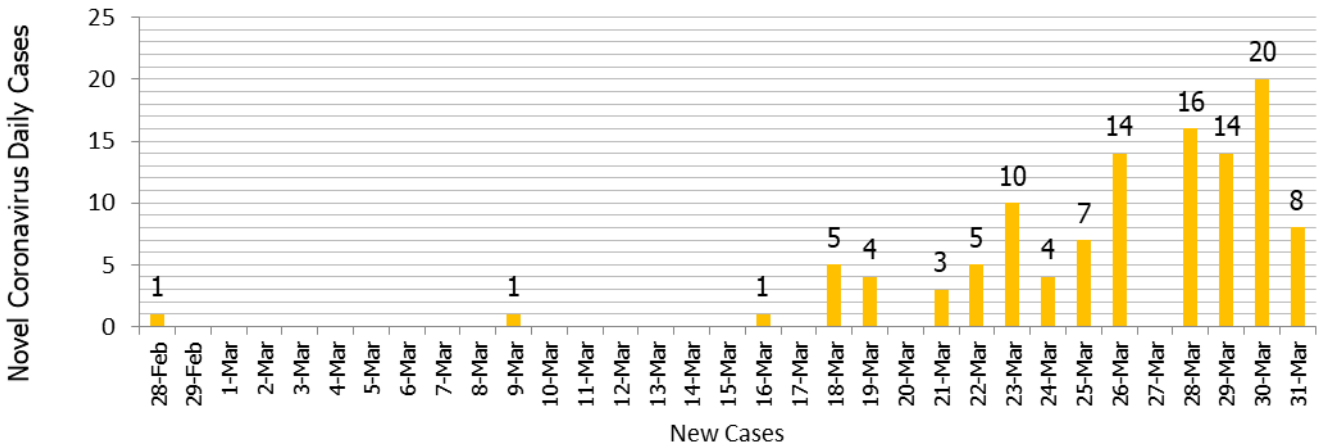


Figure 3. Daily New Confirmed Cases of COVID-19 in Nigeria from 28 February to 31 March 2020

Coronavirus Cases Per Day in Nigeria

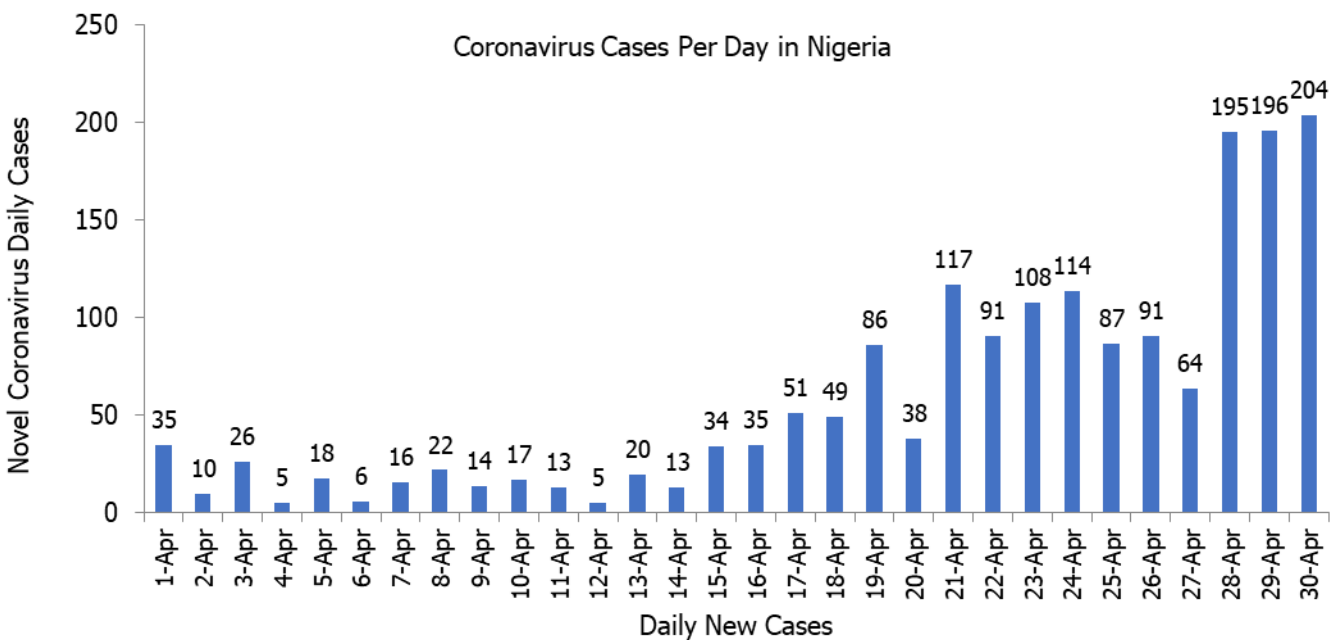


Figure 4. Daily new confirmed cases of COVID-19 in Nigeria from 1st April to 30 April 2020.

those factors associated with the spread and containment challenges of COVID-19 Pandemic in Nigeria. These factors are discussed sequentially under the succeeding subheadings:

Nigeria weak health system: Nigeria poor healthcare systems adversely affected the control of COVID-19 pandemic in the country. This is evidence as even before the COVID-19 in the country the health system was already challenged with numerous issues such as nonpayment of health worker's

salaries and allowances, lack and poor condition of available health facilities and equipments, inefficient data transmission, incessant strike actions, lack of funding, insufficient training of healthcare workers, and divisions among health workers [22]. The Low standard administration and government lack of commitment towards issues surrounding the health sector may have increased the existed internal crisis among health workers, with a consequent rise in many groups that were involved in a

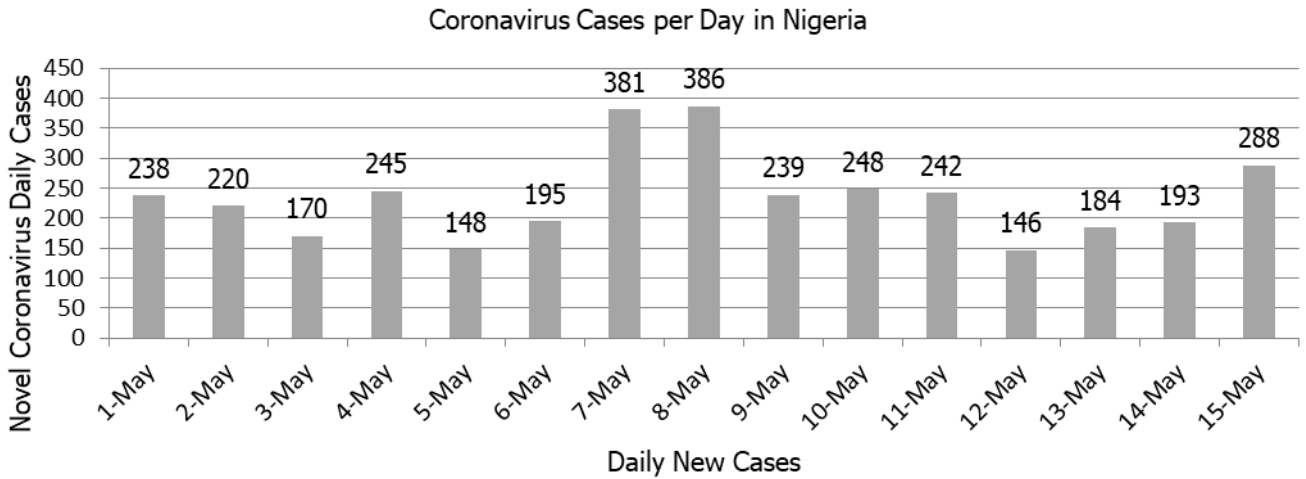


Figure 5. Daily New Cases of Confirmed COVID-19 in Nigeria from 1st May to 15 May 2020.

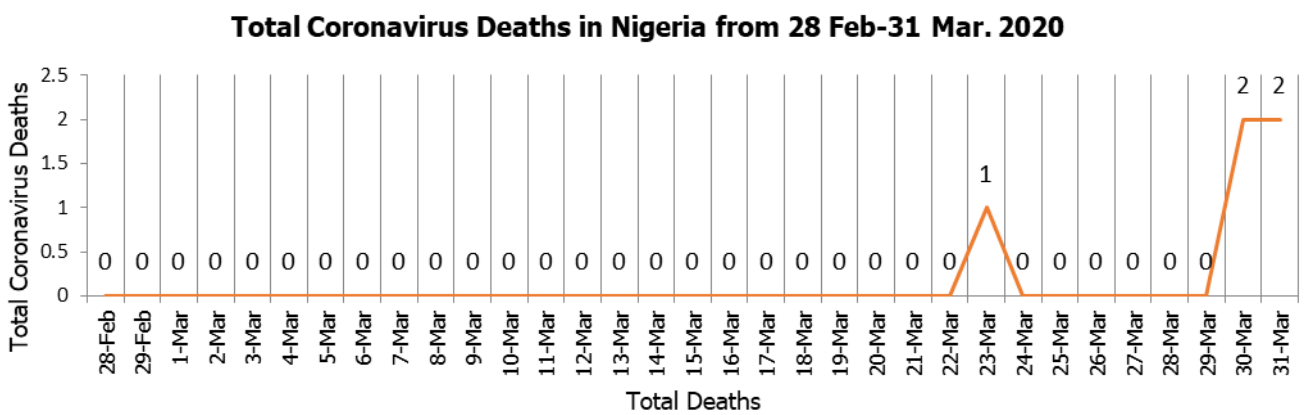


Figure 6. Total Coronavirus 19 (COVID-19) Deaths in Nigeria within 28 February-31 March 2020.

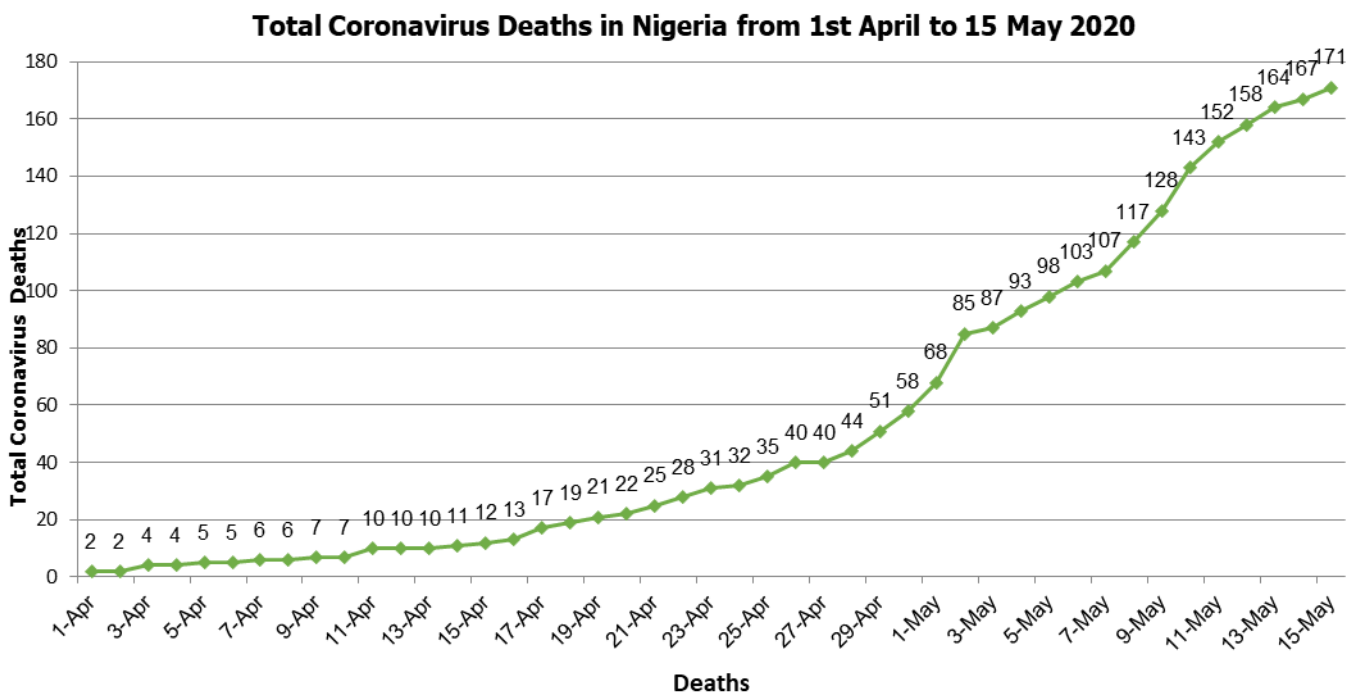


Figure 7. Total coronavirus 19 (COVID-19) deaths in Nigeria within 1 April - 15 May 2020.

prolonged power struggle. These crises perhaps contributed to the poor healthcare delivery services to Nigerians [22].

The prime position of Nigeria in Africa notwithstanding, the country still lacks proficiency in her health system. The Facilities and equipment's for health care are grossly not enough, particularly in non-urban areas [23-25]. Medical personnel in Nigeria had earlier speculated that the occurrence of the COVID-19 in the country might have serious implications as a result of a deficient health system. Even with this apparent fear, the federal Government is yet to comply with the 2001 agreement that fifteen percent (15%) of the countries budgetary allocation should be ascribed to the health sector. Report also shows that in 2008 only 3.9% of the country

budget was assigned to health, while the budget in 2020 was minimally enhanced to 4.5%. Worse still available records reveal that the country has just 40,000 medical doctors who are to offer health services to a large group of persons that are more than 200 million. This number of doctors according to the WHO standard for physician to patient ratio is simply inadequate. The WHO standard requires that one doctor should care for one thousand patients and with the available medical personnel on ground it is obvious that the number is not up to half of the number required new health challenge due to COVID 19 pandemic [26]. The continuous increase in the number of COVID 19

reported cases in the country posed serious challenge for the limited number of doctors as more hands were needed in order to adequately care for the number of patients in isolation.

Porous border: The loose state of West Africa's boundaries including Nigeria, which is linked to careless way the colonial masters mapped out the African continent as well as the state of their management by post-colonial states, has become a source of concern especially as it regards to the outbreak of COVID-19 pandemic in Nigeria [27, 28]. Due to the rapid spread of COVID-19 across the globe, fears were growing over African countries especially Nigeria government ability to protect its citizens from the COVID-19 pandemic. This is evidence as Nigerian trans-border migrations including illegal migration, drug traffickers, money laundering, child trafficking, smuggling (food items, vehicles) were obvious and could spread the virus quickly to the country. The Federal Government has observed that the sudden hike in the number of COVID-19 transmission in the country was closely associated with the country's loose boundaries, with the speculation that there were higher transmissions in the eastern part of the country as individuals were found moving on foot across borders [29]. These land borders were ignored in all the noise about the COVID-19 outbreak and was possibly one of the sources of the infection in the country [30-38].

Misinformation, misconception, conspiracy theories (not believing in covid-19 pandemic): Just a few weeks of the emergence of COVID-19 in China, misleading rumors and conspiracy theories circulated on social media across the globe. In Nigeria for instance, when the index case was confirmed, conspiracy theories abounded that the government in the corruption-plagued country had made up the case to cash in on international funds. According to Damilola Banjo a Nigerian Investigative Journalist "Nigerians at the grassroots, where the majority live, think COVID-29 is a ploy by the government to 'steal' more money from the state coffers," "With the number of confirmed cases nearing 50, opinion polls indicated that the government was still struggling to share accurate COVID-19 information despite launching an extensive online campaign" [39]. An important aspect of the claim by majority of the people was the inability of the government to disclose the name of the man from Italy who first brought the virus to Nigeria [39]. In other words, a recent Gallup-backed survey by NOI Polls showed 26% of Nigerians believed they were immune to the disease while some believed that the virus is programmed and meant for the rich and not for poor people. About 15% of the people thought that consuming ginger and garlic could offer some protective value against the virus. This scientifically unproven claim trended and circulated widely across Africa including Nigeria [27].

Nigerians were mostly affected by all these misinformation, disinformation, and rumors since the outbreak of COVID-19 pandemic in the country [40]. Misinformation or informedics is one consequence which may affect public trust in the medical profession and scientific research. This in turn would complicate an already difficult task, since it may lead to some people clutching at relatively accessible "solutions" instead of going for testing and medical treatment. Proposing and accepting untried and seemingly miraculous cures may hamper the medical management of patients with COVID-19, and maybe dangerous, even fatal [39].

Conclusion

The emerging and re-emerging infectious diseases have in recent years continued to constitute a global public health threat to human populations especially in Nigeria. Since 21st century there were successive waves of novel (Severe Acute Respiratory Syndrome (SARS), Ebola virus, Lassa fever and the present Coronavirus Disease 2019 (COVID-19) pandemic causing global public health crisis. Understanding the factors associated with the spread and containment challenges of this novel virus in Nigeria has become necessary, as this will help to assist government and other authorities to apply stiffer preventive measures to eliminate the virus and prepare for future epidemic that will emerge. The present study assessed many factors associated with the spread of COVID-19 pandemic and recommended that much attention should be paid especially in the areas of provision of personal protective equipment PPE, ventilators and isolation center and adequate funding of Nigeria health system to improve their testing capacity, and ensure that health workers are not unduly exposed to risks of infection in the course of providing care for patients. Also Nigeria government needs better protection of trans-border migrations in order to curb further spread of infections hence all these viruses are been imported

to Nigeria from outside the country. There is also an urgent need for the government and other stakeholders to organize well-articulated evidence-based health campaigns, employing all necessary means of information dissemination, including traditional channels to address different forms of infomedics, misinformation, misconception, and conspiracy theory circulated around COVID-19 outbreak in Nigeria, which seriously affected the containment effort. Also there is need for the Nigerian government to improve on its containment measures according to the WHO guidelines as highlighted in the current study.

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None to declare.

Conflicts of Interest

The authors declare no conflict of interest

References

1. Covid NC. outbreak in Nigeria: Situation report. National Centre for Disease Control: Abuja, Nigeria. (2020:2)
2. European Centre for Disease Prevention and Control. Contact tracing: Public health management of persons, including healthcare workers, having had contact with COVID-19 cases in the European Union. Stockholm (2020).
3. World Health Organization. Coronavirus disease (COVID-19) Situation Report – 116. Data as received by WHO national authorities. WHO Region (2020).
4. Nigeria Centre for Disease Control. Protecting the health of Nigerians. An update of COVID19 outbreak in Nigeria 2020. (2020).
5. Ehanire, E.O. First Case of Coronavirus Disease (COVID-19) confirmed in Nigeria 2020. (2020)
6. Busari S, Adebayo B. Nigeria bans entry for travellers from 13 countries as it announces five new cases of corona virus. Lagos: CNN. (2020)
7. NCDC. Update of COVID-19 in Nigeria 2020 March 19. (2020).
8. Dixit S, et al. How well has Nigeria responded to COVID-19. The Brookings Institution. (2020)
9. Ehanire, E.O. Update on Covid-19 in Nigeria. Nigeria Centre for Disease Control. Protecting the health of Nigeria. (2020).
10. Kazeem, Y. Nigeria is easing its coronavirus lockdown at what could be the worst possible time. Africa reporter (2020).
11. Fehr AR, et al. An overview of their replication and pathogenesis; section 2 genomic organization. *Methods Mol. Biol.* (2015);1282:1-23.
12. Paules, C.I. et al. Coronavirus infections-more than just the common cold. *JAMA* (2020)
13. Lu R, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. *The lancet.* (2020);395(10224):565-74.
14. Pal M, et al. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2): an update. *Cureus.* (2020) Mar 26;12(3).
15. Di Gennaro F, et al Coronavirus diseases (COVID-19) current status and future perspectives: a narrative review. *Int. j. environ. res. public health.* (2020) Apr;17(8):2690.
16. Sauer, L.M. What Is Coronavirus? (2020)
17. Adhikari, S P, et al. "Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review." *Infect. dis. poverty* 9.1 (2020): 1-12.
18. WHO. Coronavirus, Africa summary: Cases, deaths and news comment. As English Update 2020 15 May.
19. WHO. COVID-19 Situation update for the African Region, External situation Report 2020, 18 March. (2020).
20. Gates, M. "Coronavirus pandemic will make Africa have dead bodies lying on the streets." Bill Melinda Gates Found (2020).
21. Knapton, S. Bill Gates warns of 10 million deaths as Coronavirus spreads to Africa.
22. Adeyoye, D, et al. "Health workforce and governance: the crisis in Nigeria." *Hum. resour. health* 15.1 (2017): 1-8.

23. Health Reform Foundation of Nigeria (HERFON) 2010. (2020)
24. Maternal Mortality in Nigeria. (2010)
25. Nigeria Primary Health Care Policies (2010).
26. Ewang, A. Nigeria: COVID-19 Cases On the Rise: Ensure Emergency Preparedness for Displaced, Vulnerable People. *Human Rights Watch, Africa Division* (2020).
27. Akinyemi, O. "Porous borders and increasing human trafficking in West Africa: issues and challenges." *Int. J. Soc. Sci. Res.* 7.2 (2019): 1-52.
28. This Day (Lagos). Nigeria: The Challenge of Porous Borders (2015).
29. Mustapha. B. Porous borders, cause of rise in COVID-19 cases. Chairman of the Presidential Task Force on COVID-19 and Secretary to the Government of the Federation.
30. Vesper, I. "Porous borders place Africa at risk from coronavirus." *SciDev. net-Health* (2020).
31. Falade, O. Social distancing rule flagrantly violated as Buhari's late COS, Kyari is buried in Abuja. *TheNewsGuru.com (TNG)* 2020.
32. Vanguard. Covid-19: Muslim faithful ignore social distancing in Kano, Yola, Ughelli, observe Jum'at prayers, Vanguard Media Limited, Nigeria (2020).
33. Sawlani, S. Healthcare workers across Africa share their coronavirus stories (2020), Aljazeera .
34. Osae-Brown, A. Nigeria Fines Popular Actress for Throwing Party During Lockdown, Bloomberg (2020).
35. Africa CDC. Guidance on easing Lockdown: Considerations for easing public health and social measures including lockdown in African. Addis Ababa, Ethiopia. Africa Centres for Disease Control and Prevention (2020).
36. Ghebreyesus, T.A. WHO Director-General's opening remarks at the media briefing on COVID-19, 2020, April 13. (2020).
37. Muanya, C. (2020). Scramble for COVID-19 test. *The Guardian News Paper* (2020).
38. Mashkoo, L. The WHO's six step guide to easing coronavirus lockdowns. WHO. *The National* (2020).
39. AFP. Covid-19: Public distrust hampers Africa fight against virus misinformation AFP Fact Sheet. A Global News Agency (2020).
40. Pepper, M. S., and S. Burton. "Sheer volume of misinformation risks diverting focus from fighting coronavirus." *The Conversation* 29 (2020).