

Exploration of Short and Long Term Effects of Covid-19 Pandemic on the Nigerian Health System and Economic Development.

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Article History

Received: 08/012/2022

Accepted: 25/01/2023

Published: 30/01/2023

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Abstract

Covid-19 pandemic is one of the deadly disease that has a long and short term effects on the nation's economy as well as health system. Because of this the researcher assessed how this diseases affects the nation's economy and the health system in general. In writing this paper the researcher used secondary data where books, journals magazines, newspapers, reports and books chapters were extensively reviewed. However, the researcher found that this deadly diseases (Covid-19) begins in the late 2019 in China but it later spread to other nations Nigeria inclusive. The study found that Covid-19 pandemic in the Asian and other part of the globe has been steady. The pandemic start affecting Latin America in February 25, 2020, this was confirmed and disclosed by the Brazilian minister of health as the first cases. The study found that the eruption Covid-19 in most of the nations as a result of or affected by a plain serious respirational disease, this diseases affect all the respiratory organs (precisely the lungs). Again the researcher observed that the Covid-19 pandemic mostly affects smokers, this is because their respiratory organs have a bigger tendencies for respiratory infections. In regards to the nation's economy it is un derstood that border closure and total lockdown, social distancing, stay at home policy, avoidance of people congregation, total lockdown of schools as well as places of work where infections has been exposed, the isolation of family members, towns, cities have no doubt affected the nation's economy and the health system delivery. To overcome or to minimize the spread of the diseases (Covid-19) the researcher came up with the following recommendation. There is need to maintain social distance in all places of worship, Institutions of learning, Market, Hospital and places of social activities. Secondly, people with respiratory infections and heart related problem should be isolated and treated separately. There is need for medical advice especially to the old aged and smokers.

Keywords: Development; Economic; Covid-19; Exploration; Pandemic; Nigeria; Short and Long Term; Health System; Effects.

INTRODUCTION

The outbreak of Covid-19 disease started in the late 2019 precisely in December, and it blowout rapidly with several confirmed cases across the globe. For instance, in a study conducted by Gao, Tian, & Yang (2020) disclosed that in February 16, 2020 Covid-19 has affected 70,548 people and 1770 were recorded death in Mainland China. In a related development Japan along have recorded about 413 infection cases in December 2019. Similarly, in December in

Wuhan, China had a first covid-19 outbreak which was affected serious respiratory problem Corona Virus 2 (Covid-19). In December 2019, Wuhan, in China, first experienced the outbreak of the coronavirus disease 2019 (COVID-19). Physical futures of the affected individual of the covid-19 disease is include pathological flaking (Zhou et al., 2020).

Over two month it is understood that spread of the Covid-19 pandemic has caused a serious respiratory diseases (Coronavirus 2) (SARS-Cov-2) (Rodriguez-Morales AJ, MacGregor K, Kanagarajah S, Patel D, 2020). However, the diseases had been stable in the Asian country and other regions across the globe. Though, Latin America was not affected until 25, Feb. 2020 when the cases was first confirmed by the ministry of health in Brazil (Rodriguez-Morales AJ, Gallego V, Escalera-Antezana JP, Zambrano LI, Franco-Paredes C, Suárez JA, Rodriguez-Enciso HD, Balbin-Ramon GJ, & E, Riskey A, 2020)

This appearance of the Coronavirus disease or severe respiratory diseases (SARS-CoV-2) in Asia specifically in China in the year 2019-2020 as a pathogen communicated by the lungs road leading Covid-19 diseases which has drawn the attention of individual at both national and international level (COVID-19 Report, 2020). More so, the widespread of this deadly diseases has affected the nation economy specifically in Asian countries, and it continue spreading globally. Moreover, the widespread of the Covid-19 diseases and its infections on the world economy is highly indeterminate, this makes it very difficult for decision and policymakers to express any important economic policy (Fernando, Warwick & McKibbin, 2020).

In the late Dec. 2019, the widespread of the Covid-19 pandemic which is known as Coronavirus diseases before was first reported in China, Wuhan, later affected nothing less than 26 nations across the globe (Zhe Xu, Lei Shi, Yijin Wan, Jiyuan Zhang, Lei Huang, Chao Zhang, Shuhong Liu, Peng Zhao, Hongxia Liu, Li Zhu, Yanhong Tai & Tingting Gao, Jinwen Song, Peng Xia, Jinghui Dong, Jingmin Zhao, 2020). Covid-19 is understood as intensely determined viruses but it is a deadly diseases with about 2% fatality rate. From the above expression, it is noted that the diseases may killed people to death because of the colossal damage and continues failure in the respiratory system (Huang C, Wang Y, Li X, Chan JF, Yuan S, & Kok KH, 2020)

In regard to the widespread of this deadly diseases additional measures were taken to control the spread of the diseases, these steps include dissolution of national and international activities such as sporting, musical activities, religious, and all sort of public gathering (PG) as a steps taken to curtail the wide spread of the diseases by the national and international communities in March 2020(COVID-19 Report, 2020). The dissolution of all sort of public gathering has a positive effects on the national and international economy as well as health system.

Customarily, music, spiritual activities, and rites, sporting all public gathering are the major agent of spreading the Coronavirus diseases at both national and international levels (Memish ZA, Steffen R, White P, 2019). This diseases has put many countries of the world into economic, scientific, and public health difficulties (WHO, 2020a). In preparation to reduce the widespread of the diseases at all levels, the cancellation of mass gathering (MG) activities has position the general health challenges to the government and health authorities.

"According to (Robert,2020) Coronavirus is a diseases that mainly affects human respiratory organs,

everything that affect the organ can deteriorate the sick person as well, this will affects the individuals that were not previously affected. It is understood that smokers are more affected with the disease than nonsmokers this is because people with influenza or pneumonia can stance a major risks in with affected people with COVID-19, (Robert,2020)".

Study by Robert (2020) exposed 78 people in China alone were affected and admitted because of the COVID-19 and most of those that were hospitalized are prove to be smokers or with history of smoking, these people had 14-time risk of requiring are very high in men than in women, this is because of the high rate of men smokers in the country compared to the women. The study unveiled that most of those affected with the diseases are men, because of this the coronavirus has a direct effect on the nation economy and the health system.

Methodology

In obtaining reliable and relevant literature the researcher reviewed several articles, journal, newspaper, books, books chapter as well as published and unpublished papers. The study is qualitative in nature where secondary data were utilized. All the consulted literature were systematically reviewed and used in explaining the topic under examination. (Zaleha, 2018)

Research Design

Looking at the nature of the topic under investigation, the researcher adopted a case study approach in order to have an in-depth understanding of the phenomenon. This is because case study approach help the researcher to have an in depth knowledge on the topic under study. This approach plays an important role describing and analyzing of a case or cases (Zaleha 2018 & Creswell, 2009)

Short Term Effects of Coronavirus (Covid-19)

The present Coronavirus Disease (COVID-19) eruption has affected over 200 nations, Nigeria inclusive. Coronavirus Disease is one of the largest respiratory disease outbreaks upsetting several countries concurrently and an original strain of Coronavirus (SARS-Cove 2) has been recognized as the contributory agent. Sequel to the advice of the International Health Regulation Emergency Committee, the Director-General of WHO declared the COVID-19 outbreak a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and characterized it as a pandemic on 11 March 2020 (Ajisegiri, Odusanya, & Joshi, 2020).

Implication of Coronavirus on the Nation's Economy

Nigeria as a whole faces some economic challenges in 2014, this was as a result of weak recovery in the oil price shock with a GDP growth reduction around 2.3% in 2014. International Monetary Fund (IMF) reviewed the 2020 GDP increasing rate from 2.5% to 2% because of low price and insufficient economic space in February 2020 (Chukwuka, Onyekwena & Mma Amara, 2020).

In line with the above expression, it is observed government cannot be able to control the deaths rate from the Covid-19 diseases this is because of the wide spread of the Coronavirus diseases. Control the death rate is one of the major priority of the individual in

particular and government at large Roy M Anderson, Hans Heesterbeek, Hollingsworth, & Roy.(2020). In view of this, it is the responsibility of government to take a positive measures to enhance the economic depression in the country.

Covid-19 pandemic is one of the deadly diseases that has affected many nations in aspect human endeavour (Chukwuka & Mma Amara, 2020). Furthermore, they exposed that Coronavirus had contributed in declining in the level of production and consumption of goods and services. Again it has led to restriction of people movements in and out of the nation because of the airports and boarder closure. Covid-19 pandemic had also cut off people relationship because of the total lockdown, by implement the principle of social distancing. Not only that Covid-19 has led to increases in the price of goods and services, as well as the negative expectation in the price of goods and services, and also increases in the health care services. Economically, it is understood that the covid-19 pandemic has led to distraction production and distribution for export and import services, this has coursed a serious fall in nation's economy (Chukwuka, Onyekwena & Mma Amara, 2020).

In a related development a study by Femi (2020), unveiled that Covid-19 pandemic has affected every hook and crannies of the nation's economy, this is because of the total lockdown in all affected states in order to control the spread of the pandemic He added that the total lockdown has led to the increases in both national and international product. Most of the industries were disrupted in both production and distribution of its products (Femi, 2020).

In line with the health care system, a study by Robert (2020) lamented that the rate of mortality in China as a result of Covid-19 are intricate in men than in women. This was as a result high number of men smokers in the nation. This shows that smokers are liable to death if affected by the disease. He then revealed a study from China unveiled that 78 people were admitted as victims. Another set of researchers observed that people with the history of smoking had 14 times risk of the diseases, because of this they needs an extra care and ventilator. He believes that this may leads "to gathering of particles and infectious agents stuck in the respiratory system and will be very difficult to clear the particles", Steliga exposed that;

"Those who smoke have a greater chance of getting respiratory infections, and when one does have an infection, it is harder to recover from it. Even an occasional cigarette or secondhand smoke has been linked to increased risks from acute respiratory distress syndrome (Robert, 2020)".

He articulated that;

"As COVID-19 is a virus that primarily attacks the lungs, anything that harms the lungs can weaken patients and result in more severe effects if people do become infected. It is well-known that smoking results in worse outcomes in people with pneumonia or

influenza, and we are learning that smoking can pose significant risks in those with COVID-19, (Robert, 2020)".

However, a study by Andrea, Remuzzi & Giuseppe (2020) unveiled that 12 462 cases were confirmed and reported in Italy. Similarly, a study by the Istituto Superiore di Sanità as observed that on the 11th march 827 deaths was recorded. They later exposed that China recorded high rate of mortality as a result of covid-19 epidemic. The study found that most of the victims of the diseases are above the age of 81, and some of them had diabetes circulatory diseases, or cancer were smokers before. Therefore, it is well known that people with respiratory problems are liable to be affected if come in contact with any of the infected person, but it is also worth noting that they had Acute respiratory Distress Syndrome (ARDS) (Andrea, Remuzzi & Giuseppe, 2020). This tally with the view of Robert (2020) that most of the victims of Coronavirus are smokers.

Established Cases of Coronavirus

Covid-19 pandemic started in Asia precisely in China and later spread all over the regions and most of nations across the globe including Nigeria. Nevertheless, there are some differences and similarities on how Coronavirus is behaving in various nations (Aaron Miller, Mac Josh Reandelar, Kimberly Fasciglione, Violeta Roumenova, Yan Li & Gonzalo H. Otazu, 2020). Moreover, there was a strict control in social activities, though, there is high rate of mortality in the country. Contrary to Japan were the mortality rate is low despite it had some earlier Covid-19 cases, and have not implemented some restrictive measures of social distancing and isolation.

A study by Rodriguez-Morales AJ, Gallego V, Escalera-Antezana JP et al., (2020) clarified that in Latin America alone, the Pan-American Health Organization (PAHO/WHO) current epidemiological observant for measles showcased that on 1st January 2019 to 24th January 2020, more than 20,430 cases were confirmed and testified of measles diseases 19 death were recorded in 14 nations. The same thing with Bahamas, Argentina, Chile, Brazil, Cost Rica, Columbia, Curacao, Peru, Mexico, Venezuela, Cuba, and Uruguay. However, the study observed that 88% of the established cases in Americas was contributed by Brazil. In the early 2020, there was an astounding 124,514 measles cases were reported. The dengue occurrence degree was 12.86 cases/ 100/000 residents in the area for the continuing year, this comprises of 12,891 confirmed cases by the Laboratory technicians and 498 confirmed cases categorized as plain dengue (0.4%). Nations like Honduras, Bolivia, Paraguay, and Mexico, have testified an increases of twice or triple number of dengue cases likened with the same time from the preceding year (PAHO., 2020). In this pandemic situation, many countries are about to observe a syndetic of measles dengue, measles, and Covid-19 pandemic disclose (Rodriguez-Morales AJ, Suarez JA, Risquez A, Delgado-Noguera L, 2019).

In addition, it is recently reported that in November 2020, several Covid-19 cases were reported as depicted in the table below.

Confirmed Cases As At November 2020

Date	Confirmed Case	New Case	Total deaths	New Deaths	Total Recovery	Active Cases
15/11/2020	65,148	152	1,163	-	61,073	2,912
14/11/2020	64,996	112	1,163	-	61,029	2,804
13/11/2020	64,884	156	1,63	1	60,936	2,785
12/11/2020	64,728	212	1,162	-	60,790	2,776
11/11/2020	64,516	180	1,162	2	60,737	2,617
10/11/2020	64,336	152	1,160	2	60,333	2,843
09/11/2020	64,184	94	1,158	4	60,069	2,957
08/11/2020	64,090	300	1,154	-	59,519	3,026
07/11/2020	63,790	59	1,154	-	59,884	2,752
06/11/2020	63,731	223	1,154	1	59,844	2,731
05/11/2020	63,508	180	1,153	-	59,748	2,605
04/11/2020	63,325	155	1,153	2	59,675	2,495
03/11/2020	63,173	137	1,151	3	59,646	2,375
02/11/2020	63,036	72	1,147	1	59,328	2,561
01/11/2020	62,964	111	1,146	2	58,790	3,028
31/10/2020	62,853	162	1,144	-	58,675	3,034
30/10/2020	62,691	170	1,144	3	58,430	3,117
29/10/2020	62,521	150	1,141	2	58,249	3,131
28/10/2020	62,371	147	1,139	4	58,095	3,137
27/10/2020	62,224	113	1,135	3	57,916	3,173
26/10/2020	62,111	119	1,132	2	57,571	3,408

Source: Samuel (2020)

From the above tables, it is indicated that the number of Covid-19 victims is increasing on daily basis. Consequently, the rapid increases of this pandemic may directly affect the individual income and by extension, it affects the nation economy

Effects of Coronavirus in Nigeria

From the available information, it was confirmed that 373 cases was recorded in 14th April 2020. Example, 214 cases was recorded in Lagos, 58 cases was confirmed in Abuja FCT (Hannah, 2020). It is noted that several cases were recorded across the Northern regions, the affected state are Bauchi which recorded six cases, Katsina five Maiduguri twenty-seven, Kano four, Yobe thirteen and Kaduna six (Hannah, 2020).

Because of the above cases that were recorded, the federal government took a serious measures to control the spread of the Covid-19 diseases across the nation. The measures taken include total lockdown of all social and religion activities (Hannah, 2020). However, the measures taken by the government has affected the

nation's economy as well as the health system. For instance, government closed all the states borders, stop all sort of social and religion gathering, which comprises of Mosque, Markets, and Churches among others. It is noted that all commercial centers were closed, the closure of the commercial centres has seriously affected the nation's economy, the closure of the business centres has led to the increases in the price of goods and services, and this makes life difficult to the general populace. For instance, Kano being the business centre was lockdown for over six weeks, the total lockdown of Kano alone has affected the general populace by making live very miserable to the people across the region (Daily trust, 2020).

The closure of the states has also affected the people live and the health system were people find it very difficult to source money to pay their hospital bills or even access the medical facilities because of the wide spread of the diseases and fear of the pandemic (Dailytrust, 2020). The total lockdown of the state's commercial and religion centres has led to serious agitation by the people and the religion leaders precisely in the Northern region that is

dominated by the Muslims (Dailytrust, 2020). Because of the above agitation Katsina State government pronounced and agree to allow Friday congregation prayers on the 9th April, 2020 (Hannah, 2020).

Similarly, in the United Nations, it is noted that the effects of the Coronavirus is beyond mortality and morbidity and it has become unreliable since the beginning of the Covid-19 pandemic (Fernando, Warwick & McKibbin, 2020). Several study unveiled that the emergence of the pandemic has directly affected the nation economy, this is because it has slows down the state's economic activities, and it has also disrupted the production and distributions of goods and services (Fernando, Warwick & McKibbin, 2020). They added that all national and international business regardless of its types and scope they all depend on input from China, and China happen to be the most affected nation in the Asia, this led to underproduction of goods and services at both national and international levels. More so, China itself has started undergoing in underproduction of goods and services, this has directly or indirectly affects the State's economy (Fernando, Warwick & McKibbin, 2020). They further exposed that;

“The national and international markets is been sensitive to all sort of changes in the international market and the stock calendars has rushed. Within the international disorder in an early estimation, the International Monetary Fund (IMF) expects China to decreases by at least 0.4% compared to its early growth target of 5.6% once more reducing down its world growth by 0.1% (Fernando, Warwick & McKibbin, 2020)”

Communicable diseases such are Covid-19 spread through many way such as direct contact, handshake etc. The spread of the diseases has affected the national and international economic development this is because of the total lockdown and closure in all the commercial centres at both national and international levels (Fernando, Warwick & McKibbin, 2020). The closure of the business centres as well the borders has led to increases in the cost of production and the price of goods and services, which make it very difficult for the ordinary people to pay for their daily activities as well as the medical and electricity bills and also school fees.

In line with the above effects of the Covid-19 pandemic there was a conventional and non-conventional approach on mortality and morbidity rate, this is to estimate and control the future occurrence morbidity and mortality rate, and also to estimate the future income because of the death and disability (Fernando, Warwick & McKibbin, 2020). Total lockdown restriction of people movement has affected their time and income and direct expenses on medical care and other related expenses, such as supporting services are also added on the daily and expenditure on the diseases.

The conventional approach has undervalued the economic expenses of the coronavirus magnitudes, which is communicable and there is no approved vaccine such as HIV/AIDS, SARS, and pandemic influenza (Fernando, Warwick & McKibbin, 2020).

On a contrary opinion, a study by Roy M Anderson, Hans Heesterbeek, Hollingsworth, & Roy (2020) exposed that Coronavirus has progressed into epidemic with a little cables of spreading in several nations and wide cables resulted widespread of the diseases in a limited nations, like Iran, Italy, Nigeria, South Korea, and Japan. Most of these affected nation's may probably spread the deadly diseases of Coronavirus at the initial time before vindication actions takes (Roy M Anderson, Hans Heesterbeek et al., 2020).

To overcome the widespread of the deadly diseases a study by Roy M Anderson, Hans Heesterbeek et al (2020) lamented that the only remaining measure to curtail or minimized the spread of the Covid-19 pandemic is to the official isolation, closure of all institutions of learning, avoidance of public gathering, closure of all places of work and social activities, closure of places of worships such as Mosques Churches and all places of work where the contaminations has been observed.

Recommendations

To control or minimize the spread of the Covid-19 diseases the researcher came up with the following recommendations:

- ✓ There is needs for the World Health Organisation (WHO) to provide some significant information to the health workers and the general public on the effect of the Covid-19 pandemic to the health system and the economy.
- ✓ There is needs to intensify investigation, orientation, and capacity building to prioritize in the nation to minimize the level of Covid-19 infection at all level.
- ✓ The study recommend the use of chloroquine as recommended by the medical practitioners to those already affected with the diseases. They added that chloroquine is use to block the Coronavirus infection at the low-micro molar absorption with a little or half effective concentration at low-micro molar absorption.
- ✓ The study recommend the use of chloroquine since it is cheap and effective in blocking the Covid-19 infections.
- ✓ The researcher recommend the use of chloroquine phosphate because it is associated with pneumonia in the future.
- ✓ Covid-19 is communicable diseases therefore, the study recommends the avoidance of mass gathering, social distancing, and regular use of hand sanitizer among others.
- ✓ The researcher recommend for frequent hands washing in all places of activities, this will help in minimizing the spread of the Covid-19 diseases.
- ✓ The study further recommended that those affected should be isolated from the people and to be treated separately.
- ✓ To avoid future occurrence the study recommend for the establishment of nations task force of Covid-19 preparedness and responses (AFTCOR) this will assist in curtailing the spread of the diseases.

- ✓ To control the spread of the diseases there is needs for social measures, or actions to be carried out by communities, institution, individuals, and local national and international bodies. This include detecting and isolating case or cases, social distancing among, national and international travel procedures, and vaccine and treatment others.
- ✓ There is also needs for the adoption of some communication strategies to inform the general public on the important way to avoid the spread of the deadly diseases.

Conclusion

In conclusion, the researcher understood that Covid-19 pandemic is a serious problem to the Health system and the nation economy. The diseases has seriously affected the nation income as well as the health system, this is as a result of boarder closure, total lockdown, closures of all social activities such as marketplaces, institutions of learning, places of worship such as; Mosques and churches among others. In line with the health system, the study concluded that the disease mostly affect old aged, people with heart-related problem, smokers, and those with respiratory infections are liable to Covid-19 pandemic.

References

1. Aaron M., Mac Josh R., Kimberly F., Violeta R., Yan Li, A., & Gonzalo H. Otazu. (2020). Correlation between universal BCG vaccination policy and reduced morbidity and mortality for COVID-19: an epidemiological study.
2. Ajisegiri, W. S., Odusanya, O. O., & Joshi, R. (2020). COVID-19 Outbreak Situation in Nigeria and the Need for Effective Engagement of Community Health Workers for Epidemic Response, *I*(4).
3. Andrea, Remuzzi & Giuseppe, R. (2020). COVID-19 and Italy: what next?
4. Chan JF, Yuan S, Kok KH, et al. (2020). A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster., *395*: 514–23.
5. Chukwuka, Onyekwena & Mma Amara, E. (2020). Understanding the impact of the COVID-19 outbreak on the Nigerian economy.
6. COVID-19 Report. (2020). *Mass gathering events and reducing further global spread of COVID-19: a political and public health dilemma*. [https://doi.org/10.1016/S0140-6736\(20\)30681-4](https://doi.org/10.1016/S0140-6736(20)30681-4).
7. Creswell J.W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. London SAGE Publication, Incorporated.
8. Dailytrust. (2020). Effect of Covid-19 on the Nation Economy. *Daily Trust*, pp. 1&12.
9. Daisy, L. (2020). The Covid-19 Economic Crisis Will Change Everything: Short-Term and Long-Term Effects.
10. Femi Adekoya, A. A. and B. A. (2020). Economic impact of COVID-19 hits Nigeria's trade, supply chain. *The Guardian*.
11. Fernando, Warwick & McKibbin, R. (2020). The Global Macroeconomic Impacts of COVID-19: Seven Scenarios.
12. Gao, J., Tian, Z., & Yang, X. (2020). Breakthrough : Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19-associated pneumonia in clinical studies, 1–2. <https://doi.org/10.5582/bst.2020.01047>
13. Gates B. (2020). Responding to Covid-19: a once-in-a-century pandemic? *N Engl J Med*. Published online February 20, 2020. doi:10.1056/NEJMp2003762.
14. Hannah, H. (2020). *In northern Nigeria, distrust jeopardises the response to coronavirus*.
15. Huang C, Wang Y, Li X, et al. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China., *395*: 497–506.
16. Jimoh Amzat,a,* Kafayat Aminu,b Victor I. Kolo,b Ayodele A. Akinyele,b Janet A. Ogundairo, b and M. C. D. (2020). Coronavirus outbreak in Nigeria: Burden and socio-medical response during the first 100 days.
17. Joost, Hopman Benedetta, Allegranzi & Shaheen, M. (2020). Managing COVID-19 in Low- and Middle-Income Countries.
18. Memish ZA, Steffen R, White P, et al. (2019). Mass gatherings medicine: public health issues arising from mass gathering religious and sporting events., *393*: 2073–84.
19. NCDC Report. (2020). <https://covid19.ncdc.gov.ng/>.
20. PAHO. (2020). Epidemiological Update Dengue - 7 February 2020. https://www.paho.org/hq/index.php?option=com_content&view=download&category_slug=dengue-2217&alias=51690-7-february-2020-dengue-epidemiological-update-1&Itemid=270&lang=en. 2020.
21. Robert, P. (2020). Smokers, Vapers in Special Danger From Coronavirus, p. U.S NEWS.
22. Rodriguez-Morales AJ, Gallego V, Escalera-Antezana JP, M. C., Zambrano LI, Franco-Paredes C, Suárez JA, Rodriguez-Enciso HD, Balbin-Ramon GJ, S.-L., & E, Riskey A, C. S. (2020). COVID-19 in Latin America: The implications of the first confirmed case in Brazil. *Brazil, Travel Medicine, and Infectious Disease*, doi: <https://doi.org/10.1016/j.tmaid.2020.101613>.
23. Rodriguez-Morales AJ, MacGregor K, Kanagarajah S, Patel D, S. P. (2020). Going global - Travel and the 2019 novel coronavirus. *Travel Med Infect Dis.*, (33):101578.).
24. Rodriguez-Morales AJ, Suarez JA, Riskey A, Delgado-Noguera L, P.-M. A. (2019). The current syndemic in Venezuela: Measles, malaria, and more co-infections coupled with a breakdown of social and healthcare infrastructure. *Quo vadis? Travel Med Infect Dis.*, (27), 27:5-8.
25. Rome, F. (2020). Anticipating the impacts of COVID-19 in humanitarian and food crisis contexts. doi:10.4060/ca8464en. ISBN 978-92-5-132370-0.
26. Roy M Anderson, Hans Heesterbeek, D. K., Hollingsworth, T. D., & Roy. (2020). How will country-based mitigation measures influence the course of the

COVID-19 epidemic?

27. Samuel, O. (2020). *COVID-19 Update in Nigeria*.
28. WHO. (2020a). *Coronavirus disease (COVID-19) outbreak. 2020. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> (accessed March 17, 2020).*
29. WHO. (2020b). *Coronavirus disease 2019 (COVID-19) Situation Report – 72*.
30. Zaleha, O. (2018). *Important things about Qualitative Research*.
31. Zhe Xu, Lei Shi, Yijin Wan, Jiyuan Zhang, Lei Huang, Chao Zhang, Shuhong Liu, Peng Zhao, Hongxia Liu, Li Zhu, Yanhong Tai, C. B., & Tingting Gao, Jinwen Song, Peng Xia, Jinghui Dong, Jingmin Zhao, F.-S. W. (2020). *Pathological findings of COVID-19 associated with acute respiratory distress syndrome*.
32. Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., ... Wei, Y. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *The Lancet*, 395(10229), 1054–1062. [https://doi.org/10.1016/S0140-6736\(20\)30566-3](https://doi.org/10.1016/S0140-6736(20)30566-3)