

# COVID-19 Outbreak: Awareness and Knowledge among Healthcare Professionals in Nigeria.

<sup>1</sup>Benedict Ejikemeuwa Eya\*, <sup>2</sup>Otuto Amarauche Chukwu, <sup>3</sup>Abubakar Danraka, <sup>4</sup>Ezinne V.C Onwuekwe, <sup>5</sup>Elias Aminu, <sup>6</sup>Ernest Onyedika Umeorah

<sup>1</sup>De-Gilead Medical Services, Abuja Nigeria, <sup>2</sup>United for Development, Abuja; WEFORUS Foundation Abuja; Department of Clinical Pharmacy, University of Nigeria, Nsukka, <sup>3</sup>National Institute of Pharmaceutical Research and Development, Abuja, Nigeria, <sup>4</sup>African Centers for Disease Control and Prevention, <sup>5</sup>PriceWaterHouseCoopers, Abuja Nigeria, <sup>6</sup>Department of Pharmaceutical and Biomedical Engineering, China Pharmaceutical University

\*Corresponding Author - eya.benedict@gmail.com

## ABSTRACT

### BACKGROUND

COVID-19 is an infectious disease caused by a new contagious strain of the coronavirus. COVID-19 has been declared a public health emergency of international concern with cases confirmed in Asia, Europe, North America and Africa with majority of the spread occurring in regions with more resilient and robust health systems. With Africa beginning to experience pockets of confirmed cases and the established weaknesses in the healthcare system of many African countries such as Nigeria, the capacity required to contain COVID-19 may be lacking. Given the lack of capacity in managing other disease outbreaks such as Lassa fever, it may be pertinent to assess the knowledge of Nigerian healthcare professionals on COVID-19 and provide evidence to foster knowledge and capacity building.

### METHODS:

The study was set in Abuja, Nigeria. 500 randomly sampled respondents comprising of healthcare professionals received a pre-tested 14-item self-administered, semi-structured questionnaire addressing demographics and awareness and knowledge on COVID-19. Descriptive statistics were applied in data analysis. P values less than 0.05 were considered significant.

### RESULTS:

Four hundred and eleven (411) questionnaires were duly completed and returned, giving a response rate of 82.2%. Majority of respondents (98.3%) are aware of the COVID-19 outbreak. About 1 in 4 respondents (24.82%) could outline major symptoms of COVID-19 while 20.92% could outline at least four major preventive measures. About 3 in 4 respondents (71.7%) knew the treatment modality for COVID-19 out of which 25.3% were nurses. 25% were physicians, 30.6% were pharmacists while 19.2% were medical laboratory scientists. (p = 0.000)

### CONCLUSION

Healthcare professionals in Nigeria have shown limited awareness and knowledge on COVID-19. Hence there is need for knowledge and capacity building for healthcare professionals in Nigeria on COVID-19. This will help to boost the country's preparedness to contain an outbreak of the disease.

### Background

COVID-19 is an infectious disease caused by a new contagious strain of the coronavirus which, up until now, has not been identified in humans.<sup>1,2</sup> The virus was first identified in 2019 in China.<sup>3</sup> With symptoms such as fever, coughing and difficulty in breathing, and the rapid spread with a 2% fatality rate in confirmed cases, COVID-19 has been declared an outbreak and public health emergency of international concern by the World Health Organization.<sup>4</sup> Currently, cases have been confirmed in Asia, Europe, North America and Africa and there are fears the virus will continue to spread. Reports coming out from the United States suggest that the United States Center for Disease Control and Prevention are already raising warning signals for citizens to prepare for an outbreak which will cause significant disruption in their daily lives.<sup>5</sup> Majority of the spread has occurred in regions with more resilient and robust health systems, and with Africa beginning to experience pockets of confirmed cases, there are fears that Africa is not far from witnessing its own outbreak.<sup>6</sup> This is a major cause for concern given the established challenges facing the healthcare system in many African countries. For instance, in Nigeria, the healthcare system is weak and laden with lapses in management and administration, as well as constraints in financial and human resources.<sup>7,8</sup> This is further worsened by the current brain drain in the healthcare sector.<sup>9</sup> Thus, it can be implied that Nigeria, and indeed many other African countries may not have the capacity required to contain COVID-19 in the case of an outbreak within the region. With the dwindling human resources for health,

and the challenges the available healthcare professionals face in managing disease outbreaks in the country, such as Lassa Fever, it may be pertinent to assess the knowledge of Nigerian healthcare professionals on COVID-19. This is what this study aims to achieve, in addition to providing an evidence base on the need for knowledge and capacity building for healthcare professionals in Nigeria on COVID-19 so that they can educate the public and also prepare themselves in rendering care and support services in the event of an outbreak.

#### Methods:

The study was set in Abuja, the Nigerian capital. Abuja was chosen because of its central role in Nigeria's political, administrative and socio-economic development and because it houses the national hospital and other central medical facilities. Questionnaires were administered to 500 randomly sampled respondents who met the inclusion criteria of being either a physician, pharmacist, nurse or medical laboratory scientist with at least 1-year post qualification experience. Prior to administration of the questionnaires, three of each of the categories of respondents were used to conduct face and content validity on the instrument for data collection. Some of the ambiguity identified by the face and content validity testing were addressed by reconstructing the questions to provide more clarity to respondents.

Respondents received a 14-item self-administered, semi-structured questionnaire addressing demographics and awareness and knowledge on COVID-19. The respondents gave oral informed consent prior to administration of the questionnaires. The questionnaires took approximately 3 minutes to complete and were retrieved from the respondents immediately after completion. Descriptive statistics were applied in data analysis using IBM SPSS Statistics (Version 21; Armonk, NY, USA). P values less than 0.05 were considered significant

#### Results:

Of the 500 questionnaires distributed, 411 were duly completed and returned, giving a response rate of 82.2%. Physicians, pharmacists, nurses and medical laboratory scientists constituted 24.4%, 32.1%, 24.8% and 18.7% of the respondents respectively. Majority of respondents (98.3%) are aware of the COVID-19 outbreak. About 1 in 4 respondents (24.82%) outlined the major symptoms of COVID-19 as fever, cough and shortness of breath. About 1 in 5 respondents (20.92%) could outline at least 4 major preventive measures to prevent spread. Further results are presented in Tables 1 and 2.

Table 1: Demographics of Respondents (N = 411)

Variable	Category	Percentage distribution
<b>Gender</b>	Male	43.6%
	Female	56.4%
<b>Age</b>	<30 Years	34.8%
	31 – 40 Years	51.1%
	>40 Years	14.1%
<b>Profession</b>	Nurse	24.8%
	Physician	24.4%
	Pharmacist	32.1%
	Laboratory Scientist	18.7%
<b>Years of Practice</b>	<5 Years	60.1%
	5 – 10 Years	30.9%
	>10 Years	9.0%

Table 2: Knowledge of Respondents on COVID-19

Variable	Response	Percentage Distribution
<b>Knowledge of current COVID-19 Outbreak</b>	Yes	98.3%
	No	1.7%
<b>Causative Agent of COVID-19</b>	Bacteria	1.2%
	Fungi	3.4%
	Virus	95.4%
<b>Mode of Transmission (Multiple Response)</b>	Seafood to Human	55.1%
	Human to Human	93.4%
	Animal to Human	78.0%
<b>Facility capable of diagnosing COVID-19</b>	Any laboratory	43.6%
	Reference Laboratory	56.4%
<b>Availability of COVID-19 Vaccine</b>	Vaccines are currently available	22.9%
	No vaccines currently available	77.1%
<b>Current Treatment Modality</b>	Vaccination	26.3%
	Symptomatic	71.7%
	Surgery	2.0%
<b>Continents with Confirmed Cases (Multiple Responses)</b>	North America	34.1%
	Asia	99.7%
	South America	36.5%
	Europe	41.1%
	Africa	50.9%
<b>Number of Cases Recorded in Nigeria</b>	None	92.2%
	One	4.9%
	Five	1.5%
	Ten	1.5%

Furthermore, when stratified by profession, 88.1%, 97%, 97.7% and 98.7% of nurses, physicians, pharmacists and medical laboratory scientists respectively knew that COVID-19 was caused by a virus. ( $p = 0.008$ ) Of the respondents that have knowledge on laboratories that have the capacity to diagnose COVID-19, 19.6% were nurses, 24.8% were physicians, 28.6% were pharmacists while 27% were medical laboratory scientists. ( $p = 0.000$ ) Of the proportion that know the treatment modalities for COVID-19, 25.3% were nurses. 25% were physicians, 30.6% were pharmacists while 19.2% were medical laboratory scientists. ( $p = 0.000$ )

### Discussion

The results show limited knowledge and awareness of the COVID-19 disease among healthcare professionals in Nigeria. Healthcare practitioners are critical in promoting, managing and safeguarding public health and safety. Hence, they need to be sufficiently aware and knowledgeable of disease outbreaks like COVID-19, which is the latest global disease epidemic. This deficiency in knowledge and awareness, coupled with the inherent challenges in the Nigerian healthcare system such as weak management systems, and financial and human resource constraints could indicate poor capacity in public health promotion on COVID-19 as well as inefficiency in containing the spread of the disease if cases are to be reported in Nigeria.

The WHO releases free daily updates on COVID-19<sup>10</sup> coupled with information dissemination across mainstream media. Despite this large pool of information, many respondents still showed limited knowledge on basic information about COVID-19. This may be an indication that there are gaps in health information dissemination and a likelihood of an unwillingness by healthcare professionals to update their knowledge on current and

emerging trends in global and public health. Hence, there is a need to disseminate more information on COVID-19 through seminars and workshops in health facilities. In addition, pamphlets with key information on COVID-19 can be developed and distributed or placed in strategic points where healthcare professionals and the general public can easily access them. The Federal and State Ministries of Health as well as other professional bodies should take the lead in implementing this intervention since there are already-existing channels of communication amongst healthcare professionals.

Furthermore, the Nigerian government, through the Federal Ministry of Health and the Nigerian Centers for Disease Control and Prevention should be more proactive rather than reactive by developing a robust framework for mitigation, surveillance and response for COVID-19. It might be imperative to begin training of healthcare professionals in various aspects of the disease. This will ensure preparedness and enhanced capacity to adequately respond in case an outbreak should occur.

### Conclusion

Healthcare professionals in Nigeria have shown limited awareness and knowledge on COVID-19. Hence there is need for knowledge and capacity building for healthcare professionals in Nigeria on COVID-19. This will help to boost the country's preparedness to contain an outbreak of the disease.

### References

- [1] World Health Organization. (2020). Surveillance case definitions for human infection with novel coronavirus (nCoV): interim guidance v1, January 2020. World Health Organization. <https://apps.who.int/iris/handle/10665/330376>
- [2] United States Centers for Disease Control and Prevention. (2020). Coronavirus Disease 2019 (COVID-19). Available at [https://www.cdc.gov/coronavirus/2019-ncov/index.html?CDC\\_AA\\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2Fnovel-coronavirus-2019.html](https://www.cdc.gov/coronavirus/2019-ncov/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2Fnovel-coronavirus-2019.html) [Accessed 26<sup>th</sup> February 2020]
- [3] New York Times (2020). Is the World Ready for the Coronavirus?". Available at <https://www.nytimes.com/2020/01/29/opinion/coronavirus-outbreak.html> [Accessed 26th February 2020]
- [4] World Health Organization. (2020). Emergency Ministerial meeting on COVID-19 organized by the African Union and the Africa Centres for Disease Control and Prevention. Available at <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> [Accessed 26th February, 2020]
- [5] Fox Business. (2020). CDC warns Americans to start preparing for coronavirus outbreak in US. Available at <https://www.foxbusiness.com/lifestyle/cdc-warns-americans-to-start-preparing-for-coronavirus-outbreak-in-us> [Accessed 26th February 2020]
- [6] Suzan O. (2020). WHO urges Africa to prepare for coronavirus. Available at <https://www.von.gov.ng/who-urges-africa-to-prepare-for-coronavirus/> [Accessed 26th February 2020]
- [7] Chukwu OA, Chukwu UA, Lemoha C. (2018). Poor performance of medicines logistics and supply chain systems in a developing country context: lessons from Nigeria. *Journal of Pharmaceutical Health Services Research*; 9; 289 – 291; DOI 10.1111/jphs.12274
- [8] Chukwu OA, Ezeanochikwa NV, Ejikeme EB. (2017). Supply Chain Management of Health Commodities for Reducing Global Disease Burden. *Research in Social and Administrative Pharmacy*; 13; 871-874
- [9] Mo Ibrahim Foundation. (2018). Public Service in Africa. 2018 Ibrahim Forum Report
- [10] World Health Organization. (2020). Coronavirus disease (COVID-19) outbreak. Available at <https://www.who.int/emergencies/diseases/novel-coronavirus-2019> [Accessed February 24 2020]