Original research article

~~River State, Nigeria Statistiques COVID-19 entre avril 2020 et mars 2021 : Analyse des~~ data~~COVID-19démographiques, répartition géographique et symptômes couramment présentés~~de River State, Nigeriaentre avril 2020 et mars 2021

.

ABSTRACT

Introduction **Objectives:** ~~Cette recherche fournit une étude épidémiologique préliminaire de l'épidémie~~Analyer les donnéesof COVID-19 in Rivers State, Nigeria entre avril et mars 2021.

Study design :~~récupération de données secondaires~~

~~**Lieu et durée des études :** Département d'épidémiologie du Département de la santé publique de l'État de Rivers, ministère de la Santé en décembre 2022~~.

Methodology : All patients with incomplete data were excluded from the study. Secondary data recorded in Excel were extracted from the Department of Epidemiology, Rivers State Ministry of Health and exported to IBM Statistical Product and Service Solutions (SPSS) version 25 for l'analysis. Frequencies were generated and reported in tabular form. Ethical approval was obtained from the Board Ethics Committee of the State Ministry of Health, Port Harcourt.

Results : ~~10,5% des données étaient incomplètes~~. The mortality rate was 1.4%. ~~Ÿ~~About two-thirds of those infected were in Port Harcourt Local Government Area (LGA) and almost one-third in Obio/Akpor LGA. ~~Ÿ~~17.4% of those infected had a positive travel history and 1% attended a funeral before the onset of infection. ~~Quatre~~ [4,843 (76.9%)] out of five confirmed people had symptoms ranging from fever, cough, loss of smell and chest pain, among others. There is a statistical correlation between the sex and age group of infected people (<0.0001) . More men were infected than women and those in the age groups 31-40, 41-50 years old. accounted for three-fifths of those infected.

Conclusion : Men were three times more infected than women and the mortality rate was 1.4%.

Comment [D1]: If it is the hospital or a community health center, you must specify

Comment [D2]: No mention in the abstract, it must start with a brief introduction defining COVID-19

Comment [D3]: This is not part of the abstract

Comment [D4]: Should be in the methodology

Comment [D5]: The type of the study is missing

Comment [D6]: These were already excluded from the study

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Keywords: ~~Symptômes courants~~Analyse, COVID-19,
River State, Nigeria, de avril 2020 à mars 2021
~~Données démographiques, Propagation géographique~~

1. INTRODUCTION

The World Health Organization (WHO) declared the outbreak of the novel coronavirus in Wuhan, China, a global emergency on January 20, 2020.1 It recognized its potential to cause a global pandemic on February 24, 2020 and declared a COVID-19 pandemic on March 11. , 2020.1 From a scientific perspective, rarely has a single pathology required the mobilization of as much effort and resources as COVID-19.2 Globally, as of

January 9, 2023, 20.5 million cases of COVID-19 had been confirmed worldwide and 182,000 deaths had been confirmed. reported to the World Health Organization.1 Additionally, a total of 5.51 billion people worldwide have received one dose of a COVID-19 vaccine (71.8% of the global population.3.4 In Africa, as of January 9, 2023, there were 12,216,748 confirmed cases, 256,542 deaths and 801 million vaccine doses administered, with 25.6% of Africans fully vaccinated.2,4-6 Infection COVID-19 was first reported in Nigeria on February 27, 2020 and as of January 9, 2023. There have been 266,463 confirmed cases, 3,155 deaths and 28.1% of the population fully vaccinated. 4.7 - 11

On April 21, 2020, the race to develop a COVID-19 vaccine began, and by May 10, 2022, more than 5.16 billion (67.2%) people worldwide would have received at least one dose of the vaccine. against COVID-19. 12 At that time, in Nigeria, less than 35% of the population had received at least one dose of the COVID-19 vaccine and only 7.4% had been fully vaccinated.12

Despite the devastating effects of the COVID-19 pandemic on many countries around the world, the impact in some parts of Africa has been less.2 ~~,13~~, 13The effects of the pandemic on the African continent, including Nigeria, have not not been as devastating as in other ~~.~~continents despite predictions that it would be the most vulnerable and hardest hit continent.13-17 Thus, many public health experts were perplexed because Africa reported fewer cases and deaths from COVID-19 than expected.13 Additionally, most identified cases of COVID-19 cases in Africa were imported from Europe and the United States, rather than the original epicenter of the COVID-19, China.18

As the rapidly evolving COVID-19 pandemic has placed a heavy burden on health systems, it was expected that the pandemic would be worse in low- and middle-income countries (LMICs) due to weak health systems, limited financial resources and inadequate protective equipment ~~.~~, poor testing and treatment capacities, and a lack of funding for research.19 However, this was not the case as the mortality rate was low in LMICs.

There is a lack of data in the South-South region on the structure and presentation of COVID-19 cases in Rivers State. Additionally, what are the demographics of infected people in the community d', nalyse des données de COVID-19 dans l'état de state River au Nigeria d'avril 2020à mars 2021~~ maladie était elle concentrée et comment s'est elle manifestée ? Cette étude a répondu à ces questions.~~where'

2. MATERIALS AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

Comment [D10]: The type of study, study population and study period are missing, which are not well defined. The methodology lacks substance in content.

This study is a report of COVID-19 cases during the peak period (April 2020 to March 2021) of the pandemic in Rivers State, Nigeria. Secondary data was collected from the Department of Epidemiology, Rivers State Department of Public Health, Ministry of Health, in December 2022.

Data were entered into Microsoft Excel 2010 (Microsoft Corp, Washington, USA) and analyzed with Statistical Product and Service Solutions (SPSS) version 25 (IBM, Armonk, New York, USA).

Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. The association between participant characteristics was analyzed using the chi-square test. The results were presented in tabular form.

The inclusion criteria were complete secondary data of people identified, diagnosed, monitored and treated for COVID-19 between April 2020 and March 2021, while the exclusion criteria were incomplete data.

Ethical approval was obtained from the Rivers State Ministry of Health Ethics Committee and the University of Port Harcourt Ethics Committee.

3. RESULTS AND DISCUSSION

Table 1 shows the demographics of patients who have had COVID-19 in Rivers State.

Of the seven thousand thirty-eight patients (7,083), only six thousand two hundred and ninety-nine (6,299) had complete data. More men were infected than women with a M:F of 3:1. 57% of those infected were in the fifth and sixth age groups and 70.8% had at least post-secondary education. Three-fifths were diagnosed at home and 85.8% were diagnosed at the COVID-19 center at the Rivers State University Teaching Hospital (RSUTH). Mortality from COVID-19 in Rivers State was 1.4%.

Table 1. Demographics of people infected with COVID-19 between April 2020 and March 2021

Variables	Frequency	Percentage
Gender		
Male	4817	76.5
Female	1482	23.5
age range		
1-10	96	1.5
11-20	515	8.2
21-30	907	14.4
31-40	2060	32.7
41-50	1655	26.3
51-60	738	11.7
61-70	237	3.8
71-80	68	1.1
81-90	21	0.3

>90	2	0.0
Education		
No formality	1296	20.6
Nursery	18	0.3
Primary	289	4.6
Secondary	236	3.7
Postsecondary	3330	52.9
Tertiary	11:30 a.m.	17.9
Diagnostic centers		
Rivers State University Teaching Hospital (RSUTH)	964	13.9
Port Harcourt University Teaching Hospital (UPTH)	344	4.9
Other health facilities	1575	22.7
Home	4070	58.5
Hospitalization		
Yes	1395	22.1
No	4904	77.9
Laboratory centers		
Rivers State University Teaching Hospital (RSUTH)	5403	85.8
Port Harcourt University Teaching Hospital (UPTH)	424	6.7
SPDC Molecular Laboratory	218	3.5
INDORAMA molecular laboratory	83	1.3
Other government-approved laboratories	171	2.7
Mortality		
Alive	6211	98.6

Dead	88	1.4
Total	**6299**	**100.0**

Mean age = 38.63 ± 13.37 years, Median = 38 years, SEM = 0.17, V = 178.67

Table 2 shows that 1 in 3 infected men were in the 31-40 age group and 3 in 10 men were in the 41-50 age group, while for women, 1 in 5 women and 1 In 4 women who were infected were infected were in the age groups 21-30 and 31-40 years respectively. The association between age and sex was statistically significant.

Table 2. Association between sex and age group of all people infected with COVID-19 between April 2020 and March 2021

Variables	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**Frequency**	**Percentage**	***P.***
Sex	**Male**		**Female**		**Total**		
Age groups (years)							**<0.001**
1-10	57	1.2	39	2.6	96	1.5	
11-20	267	5.5	248	16.7	515	8.2	
21-30	604	12.5	303	20.5	907	14.4	
31-40	1675	34.8	385	25.9	2060	32.7	
41-50	1412	29.3	243	16.4	1655	26.3	
51-60	578	12.0	160	10.8	738	11.7	
61-70	171	3.6	66	4.5	237	3.8	
71-80	42	0.9	26	1.8	68	1.1	
81-90	11	0.2	ten	0.7	21	0.3	
>90	0	0.0	2	0.1	2	0.0	

Total	**4817**	**100.0**	**1482**	**100.0**	**6299**	**100.0**

Table 3 shows that most people infected with COVID-19 lived in urban LGAs in Rivers State.

Table 3. Geographic distribution of people infected with COVID-19 between April 2020 and March 2021

Variables	Frequency	Percentage
Geographical distribution by LGA		
Obio/Akpor	1888	30.0
Port Harcourt	3998	63.5
Eleme	258	4.1
Beautiful	80	1.3
Ikwerre	12	0.2
Oyigbo	12	0.2
Others	51	0.8
Total	6299	100.0

Table 4 shows some of the symptoms exhibited by infected people. 76.9% of patients presented at least one sign/symptom. A fifth had a dry cough, a tenth had a fever and a third had dysphagia, bleeding gums, malaise and anorexia. 6% suffered from ammonia.

Table 4. Some signs and symptoms presented by people infected with COVID-19 between April 2020 and March 2021

Variables	Frequency	Percentage

Symptoms		
Yes	4843	76.9
Abdominal symptoms		
Yes	6	0.1
Dysphagia		
Yes	1976	31.4
Chest pain		
Yes	73	1.2
Chills/Sweats		
Yes	11	0.2
Confusion		
Yes	3	0.0
Dry cough		
Yes	1289	20.5
Cough + sputum		
Yes	391	6.2
Cough + blood		
Yes	46	0.7
Fever		
Yes	604	9.6
Headache		
Yes	270	4.3
Bleeding gums		
Yes	1976	31.4

Articular pain		
Yes	7	0.1
Lung fluid (auscultation and x-rays)		
Yes	5	0.1
Faintness		
Yes	1976	31.4
Stiff neck		
Yes	61	1.0
Hematemesis		
Yes	77	1.2
Loss of appetite		
Yes	1976	31.4
Vomiting		
Yes	39	0.6
Conjunctivitis		
Yes	5	0.1
Acute respiratory syndrome		
Yes	16	0.3
Loss of taste		
Yes	5	0.1
Loss of smell		
Yes	378	6.0
Enlarged lymph nodes		
Yes	47	0.7

Wheezing		
Yes	37	0.6
Inability to walk		
Yes	36	0.6
Flail Chest		
Yes	36	0.6
Oxygen saturation below 94		
Yes	1978	31.4
Total	**6229**	**100.0**

Discussion

It is said that pandemics are not gender neutral. [20-23] The demographics of people infected with COVID-19 have changed as the pandemic has progressed. There has been a shift from the older age group to the younger ones. A study from the United Kingdom reported an increase in excess hospitalizations since August 1, 2020 among women aged 20 to 40. [24] Among patients admitted to hospital, 49 (12.0%) were aged 21 to 30, compared to 33 (8.1%) aged 41 to 50 and 35 (8.6%) aged 61 to 69 years. Of the men admitted to hospital, only 17 (3.7%) were in the age group of 21 to 30 years . [24] Studies have shown that serious illness and mortality are higher overall in men aged over 60 years. [25] The one-year report of people infected with COVID-19 in Rivers State, Nigeria showed that among infected women, 303 (20.5%) were aged 21-30 years, compared to 243 (16.4%) aged 41 to 50 years. and 66 (4.5%) aged 61 to 70 years. Among the infected men, 604 (12.5%) were in the age group of 21 to 30 years.

The Rivers State COVID-19 report showed a mean age of 38.63 ± 13.37 and that males were 3 times more infected than females. This could be attributed to the fact that many men are breadwinners, travel a lot, wash their hands less and have underlying medical conditions. [26] This may also be due to biological differences

between the two sexes, since studies have shown that women have stronger immune systems than men. [27] Studies in other regions of the world have also reported male dominance. [28-32] A study that reported COVID data from 10 European countries found that women diagnosed with COVID-19 outnumbered men, although working-age people showed a reversal of the trend. around retirement. [33] It further reported that infection rates among women in the 60 to 69 age group have declined and resulted in crossover with infection rates among men. Furthermore, women's relative disadvantage peaks between ages 20 and 29, while men's relative disadvantage peaks between ages 70 and 79. [34] High infection rates among working-age women have been attributed to the likelihood that they occupy a greater share of health and care-related occupations in the prime working age groups. [35] The same factors that determine women's higher life expectancy explain their lower mortality rates and higher male disadvantage at older ages. [33]

As in other countries, most of those infected came from urban areas. COVID-19 started in urban communities before spreading to rural areas. [34] This can be attributed to their lifestyle and wealth. Many can afford to travel to other countries and, in fact, some have found themselves stuck in these countries during the pandemic. [35,36] Additionally, urban areas are high-density areas with many leisure centers and clubs. [37] Thus, the ease of spread was rapid among them.

Rivers State Covid data showed that 31.4% of those infected experienced sore throat, bleeding gums, malaise and loss of appetite. 9.6% had a fever. The most common symptom presented in the state was sore throat. This compares to the study carried out in China by Guan et al which reported the same thing. [38] Other studies have reported different types of symptoms.A study of 41 patients in China found that 98% and 76% had fever and cough, respectively. [39] Another study reported 26% fever and 17.4% sore throat.among the participants. [40] Jin-jin Zhang et al reported 917% fever and 75% cough among participants. [41]

4. CONCLUSION

Men were three times more infected than women, and the COVID-19 mortality rate during the reported year was 1.4%.

Comment [D11]: More detail must be given in the conclusion to highlight the methodology in relation to the results obtained according to the objectives.

CONSENT (IF APPLICABLE)

"All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for the publication of this case report and accompanying images. A copy of the written consent is available for review by the editorial board/the editor-in-chief/the editorial board. members of this journal."

ETHICS APPROVAL (IF APPLICABLE)

Ethics Committees of the University of Port Harcourt and Rivers State Ministry of Health Ethics Council.

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