Original Research Article

Accessing Healthcare Services During Lockdown in an African Semi-Urban Community: Influence of the Knowledge of COVID-19

ABSTRACT

Aim: Since the covid-19 pandemic began, prevention and treatment services for non-communicable diseases have been significantly interrupted. This study assessed the influence of COVID-19 knowledge on using healthcare services during the lockdown in Nigeria.

Methods: The study was a descriptive cross-sectional survey conducted in Ado-Odo Ota, local government areas, Ogun State, Nigeria using a structured questionnaire between January and February 2021. A multistage probability sampling technique was employed to collect data from 383 adults aged 20 – 60 years and the data were analyzed using IBM-SPSS version 25.0.

Results: Although all respondents (100.0%) have heard of COVID-19, only 52.2% believed it was real. The respondents displayed poor overall knowledge of COVID-19 as only 32.1% were knowledgeable about it. Before the COVID-19 pandemic, 44.9% said they visited hospitals for treatment compared to 16.2% during the lockdown. The reasons for not using hospitals include the fear of taking a COVID-19 patient (38.4%) and buying medicines from pharmacies (33.9%). Those who used herbs constituted 20.6%, 15.4% could not afford service charges, 12.0% would pray or use spiritual materials instead, and 7.3% were afraid of being infected with the disease. Only 17.9% of those knowledgeable about COVID-19 would go to the hospital during the lockdown.

Conclusion: Healthcare workers and the masses should be adequately trained on healthcare management during pandemics to avoid misconceptions about COVID-19. This will help improve access to healthcare services and promote wellbeing among the low-resource setting populations.

Keywords: COVID-19, healthcare services, lockdown, pandemic

INTRODUCTION

Since the COVID-19 pandemic began, prevention and treatment services for non-communicable diseases (NCDs) have been significantly interrupted [1]. The survey, conducted by 155 countries over three weeks in May, confirmed that the impact is global and particularly severe in low-income countries [1]. "Disruption of the health system during the COVID-19 pandemic is also projected to have a disproportionately detrimental effect on access to healthcare for chronic care patients in low- and middle-income countries (LMICs) [2, 3]. However, prior crises have shown that these disruptions can be compounded or alleviated by individual patient and health system reactions. For example, during Zimbabwe's and Namibia's political and economic crises and flood catastrophes, patients receiving antiretroviral therapy for HIV reported skipping doses, sharing and selling medications, and altering regimens [4, 5]. While during Kenya's 2008 political upheaval, patients and providers were able to accumulate medication to avoid treatment cessation [6]. Hospitals, clinics, health centers, pharmacies, and other essential services remained open during this lockdown. However, patients' access to health treatment may have been significantly influenced by the geographical distribution of health facilities, strict restrictions on cross-border movement of people, suspension of public transportation, and patients' fear of COVID-19 infection" [7].

As the pandemic spreads globally, the strain on Africa´s healthcare systems that have been increasingly overwhelmed needs to be alleviated. In a developing country like Nigeria, the dismal

state of the Nigerian healthcare system has been increasingly apparent with the outbreak of the COVID-19 pandemic [8]. As seen by a high death toll, the devouring character of the pandemic in first-world countries inspires fear among Nigerian inhabitants. Furthermore, these anxieties are not necessarily due to the lethal nature of COVID-19 but rather to a combination of factors, including an inefficient and inattentive administration, as well as outdated health institutions with substandard working conditions and incentives [9].

Patients worldwide have expressed reservations about obtaining medical attention for non-COVID-19-related and non-emergency diseases, mainly due to the requirement to maintain social distance and the possibility of getting COVID-19 [10]. Additionally, healthcare workers fear giving high-quality traditional care, which affects the degree of care patients receive for their medical conditions [11]. COVID-19 appears to have received all of the emphasis in healthcare, while other public health concerns have received far less attention [12-14]. Without addressing inaccessibility to healthcare services, access to certain forms of care would be decreased; reduced access to care is likely to harm people's health. Some resort to herbal remedies or self-medication due to the difficulty that patients in need of medical care face, oblivious to the potential consequences of these acts—poisoning and complications from the use of pharmaceuticals not suggested by qualified medical personnel [15]. Then there is the worst hazard of all: death resulting from hospital neglect [16]. Unrestricted access to healthcare must be maintained in the face of the COVID-19 pandemic, but this will not be easy.

Additionally, healthcare providers are a crucial asset for all countries. Their health and safety are critical for uninterrupted and safe patient care and pandemic containment [17]. However, health care providers caring for patients during the severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS) outbreaks faced great stress due to the high risk of infection, stigma, understaffing, and uncertainty, and comprehensive support was a priority both during and after the outbreaks [18]. Quantitative studies have revealed an increased risk of mental health disorders in frontline health care personnel who serve patients with COVID-19. These mental health problems include anxiety, depression, insomnia, and stress [19]. Frontline physicians and nurses who lacked infectious disease expertise had additional difficulties adjusting to an entirely new work environment under this stressful situation, all of which affected access to healthcare services, particularly by non-COVID-19 patients [17].

Following the discovery of a small number of COVID-19 cases, several African countries, including Mali, Botswana, Uganda, Senegal, South Africa, and Ghana, recommended that patients seek medical assistance online rather than in person [20, 21]. However, this telemedical medical network, which was intended to bridge the gap in patients' inaccessibility to medical care, presented its own set of difficulties. Inadequate internet connectivity, a lack of telemedicine knowledge, and the instability of basic infrastructure in Africa, with a particular emphasis on the power supply, top the list of obstacles confronting African countries in establishing a robust telemedical network [16]. Africans' inadequate knowledge of telemedicine is one of the reasons it remains unpopular in many African countries. Physical interaction with healthcare providers is still necessary because distant doctors are limited in treating ailments. Panic buying was also one of the top headlines of the COVID-19 pandemic. Due to shortages of hand sanitizers, masks, and pain medications, this transnational phenomenon jeopardized health systems' ability to prevent COVID-19. Panic purchase of prospective remedies may also reduce drugs available to individuals with chronic disorders [22].

Comment [D1]: Repeated word

Comment [D2]: Clear the meaning

METHODOLOGY

Study Area

This study was carried out in Ado Odo Ota, one of the 19 local government areas of Ogun State. It was established on May 19, 1989, after the merger of Ota, part of the defunct Ifo / Ota LG, with Ado-Odo / Igbesa Areas of the Yewa South LGAs.

Comment [D3]: State meaning

Research Design

The study was a descriptive cross-sectional survey conducted using a questionnaire as the study instrument to obtain responses from people. The study was carried out between January 25 and February 13, 2021, to determine the effect of six-month lockdowns (March to September 2020) on the residents of Ado-Odo Ota LGA. A cross-sectional descriptive design was used and a structure questionnaire was employed to gather essential data on different aspects of COVID-19, such as knowledge, perception, and impacts on accessibility to health in the Ado Odo, Ota LGA. This research used a multistage probability sampling technique. Probability sampling means an equal probability for any individual in the population to be included in the study.

Study population

Ado-Odo Ota LGA has a population of 526,565 at the 2006 census and a population projection of 733,400 in 2016 as estimated by City-Population[25]. The target population is composed of both men

and women who reside within Ado-Odo Ota Local Government Area. The study did not exclude any adult based on the level of education, ethnicity, complexion, or socio-economic status.

Sample size calculation

The sample size was calculated based on a margin of error of 5%, a confidence level of 95%, using the formula below; the sample size was estimated at 383 adults.

The sample size was calculated using the formula below:

$= \frac{Z^2 \alpha/_2 \, p(1-q)}{d^2}$

Where n=sample size
Z= standard normal deviation with 95% confidential interval = 1.96; d = absolute precision = 0.05.
Therefore, from the above, the sample size is:

$$n = \frac{1.96^2 . 0.5(1-0.5)}{0.05^2}$$

$n = \frac{3.8416x\ 0.2491}{0.0025}$=382.777024≈ 383

Data analysis

First, the completed interview guides were coded, and the data processing was done using the IBM-Statistical Package for Social Sciences (IBM-SPSS) version 25.0 for Windows *IBM* Corp., Armonk, N.Y., USA. The descriptive data include the socio-demographic characteristics of the respondents, knowledge and perception of COVID-19, and its impacts. Data were described as percentages/proportion, mean/average, and standard deviation and presented as charts or tables.

Inclusion criteria

All adults (males and females) aged 20 – 60 will be included in the study. The study participants were residents in Ado-Odo Ota LGA.

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Exclusion criteria

Teenagers, adults older than sixty years, and those who do not reside in Ado-Odo Ota LGA or those unwilling to participate in the study were excluded.

RESULTS

As shown in Table 1, 54.0% of the respondents were females, mostly within 20-40 (65.8%), with a peak age of 20 – 30 years (37.6%). More than three-fifths (66.1%) were Christians, with just 2 (2.1%) traditionalists. A very high proportion of the respondents were married (66.8%), almost half (48.0%) had post-secondary education, and 25.8% had primary or no formal education. The proportion that earns less than 20,000 Naira monthly was 40.2%, and just 5.5% earn above100,000 naira monthly.

Knowledge and misconception about COVID-19

Although all respondents (100.0%) have heard of COVID-19, only 52.2% believed it was real, and 14.6% were not sure it existed. The majority of the respondents (64.8%) got information about COVID-19 through television/radio, 28.2% mentioned social media, 17.2% on the internet, and 3.9% from health workers. Only 30 people (7.8%) knew somebody who had been tested positive for COVID-19. A large proportion of the respondents (46.0%) believed that COVID-19 is a "biological weapon designed from China," 31.9% said it was caused by 5G network, 17% referred to it as a "severe illness transmitted to people from wild animals," 14.4% called it "a biological weapon designed by the USA government," and 2.1% thought it was an "exaggeration by news media to cause fear and panic." The most mentioned symptom was sneezing (84.1%), followed by cough (55.6%), fatigue/tiredness (39.4%), and sore throat (36.3%), while the least mentioned include conjunctivitis (1.0%), muscle aches and pains (6.0%) but none said diarrhea. Concerning modes of transmission of COVID-19, 49.1% said one could be infected by "touching contaminated objects or surfaces," 46.2% mentioned airborne droplets via breathing, sneezing or coughing, 12.3% mentioned through kissing, hugging, sex, or other sexual contacts, and 9.4% mentioned through the eating of contaminated water or food. More than three of five respondents (65.3%) said COVID-19 could be prevented through "regular hand washing and social distancing," only 22.2% mentioned "disinfection of contaminated surfaces," and 13.1% suggested "closing and fumigation of schools and public

places." On the other hand, most respondents (99.5%) said African hot weather could not prevent COVID-19, 96.6% did not believe that it could be prevented by "consuming gins/alcohol, herbs, and African foods," 99.2% and 97.7% disagreed with "taking chloroquine/antibiotics and drinking hot water, respectively.

It shows that respondents in this study displayed poor overall knowledge of COVID-19 as only 123 (32.1%) were knowledgeable about the disease while 260 (67.9%) had inadequate knowledge. Gender, religion, and marital status were not significantly associated with the knowledge of COVID-19, but age, education, and monthly income were significantly associated with the knowledge of the pandemic (Table 1).

Table 1: Respondents overall knowledge of COVID-19 with socio-demographics

Characteristics		Overall knowledge of COVID-19			
		Good	Poor	X^2	P-value
Overall	383	123 (32.1)	260 (67.9)	-	-
Gender					
Male	176 (46.0)	63 (35.8)	113 (64.2)	2.023	.19
Female	207 (54.0)	60 (29.0)	147 (71.0)		
Age category					
20 – 30	144 (37.6)	61 (42.4)	83 (57.6)	12.364	.006*
31 – 40	108 (28.2)	24 (22.2)	84 (77.8)		
41 – 50	79 (20.6)	23 (29.1)	56 (70.9)		
51 – 60	52 (13.6)	15 (28.8)	37 (71.2)		
Religion					
Christianity	253 (66.1)	87 (34.4)	166 (65.6)	2.503	.289
Islam	118 (30.8)	34 (28.8)	84 (71.2)		
Traditional	12 (2.1)	2 (16.7)	10 (83.3)		
Marital status					
Single	94 (24.5)	38 (40.4)	56 (59.6)	4.025	.13
Married	256 (66.8)	76 &29.7)	180 (70.3)		
Divorced/separated/widowed	33 (8.6)	9 (27.3)	24 (72.7)		
Education					
Post-secondary	184 (48.0)	80 (43.5)	104 (56.5)	45.749	<0.001*
Secondary/diploma	100 (26.1)	38 (38.0)	62 (62.0)		
Primary/no formal education	99 (25.8)	5 (5.1)	94 (94.9)		
Monthly income					
<20,000	154 (40.2)	37 (24.0)	117 (76.0)	15.382	.002*
20,000 – 50,000	54 (14.2)	18 (33.3)	36 (66.7)		
51,000 – 100,000	19 (5.0)	9 (47.4)	10 (52.6)		
>100,000	21 (5.5)	13 (61.9)	8 (38.1)		

The table below show displays respondents aged 30 and below were 2.10 [95% CI- 1.35 – 3.26; *P* < .001) times more likely to be aware of COVID-19 than older people. Also, respondents with secondary education were 11.52 [95%CI-4.30 – 30.89; *P* < .001], and post-secondary were 14.46 [95%CI-5.62 – 37.23; *P* < .001] more likely to be aware of COVID-19 than their counterparts who attained primary/no formal education (Table 2).

Table 2: Logistic regression analysis of socio-demographic characteristics associated with knowledge of COVID-19

Response	Overall knowledge of COVID-19			
	Good n (%)	Poor n (%)	OR 95% CI	P-value

Gender				
Female	60 (29.0)	147 (71.0)	1.00	.16
Male	63 (35.8)	113 (64.2)	1.37 (0.89 – 2.10	
Age category				
≤ 30 years	61 (42.4)	83 (57.6)	2.10 (1.35 – 3.26)	<0.001*
>30 years	62 (25.9)	177 (74.1)	1.00	
Religion				
Christianity	87 (34.4)	166 (65.6)	2.62 (0.56-12.23)	.22
Islam	34 (28.8)	84 (71.2)	2.02 (0.42 – 9.72)	.38
Traditional	2 (16.7)	10 (83.3)	1.00	
Marital status				
Single	38 (40.4)	56 (59.6)	1.81 (0.76-4.32)	.18
Married	76 (29.7)	180 (70.3)	1.13 (0.50-2.54)	.78
Divorced/separated/widowed	9 (27.3)	24 (72.7)	1.00	
Education				
Post-secondary	80 (43.5)	104 (56.5)	14.46 (5.62 – 37.23	<0.001*
Secondary/diploma	38 (38.0)	62 (62.0)	11.52 (4.30 – 30.89)	<0.001*
Primary/no formal education	5 (5.1)	94 (94.9)	1.00	
Monthly income				
<20,000	37 (24.0)	117 (76.0)	1.00	-
20,000 – 50,000	18 (33.3)	36 (66.7)	1.58 (0.80 – 3.11)	.18
51,000 – 100,000	9 (47.4)	10 (52.6)	2.85 (1.08-7.53)	.035*
>100,000	13 (61.9)	8 (38.1)	5.14 (1.98-13.36)	.001*

Use of healthcare services during COVID-19 lockdown

As shown in Table below, before the COVID-19 pandemic, 44.9% said they visited healthcare facilities for treatment when sick, 14.4% sometimes visited the hospitals compared to 16.2% during the COVID-19 outbreak. The most common reason stated for not visiting hospitals to treat illnesses during the COVID-19 outbreak include the fear of being declared taken as a COVID-19 patient (38.4%); 33.9% would instead buy medicines from pharmacies to go to the hospital. Those who used herbs constituted 20.6%, 15.4% could not afford service charges, 12.0% would instead pray or use spiritual materials, 7.3% were afraid of being infected with the disease, and 3.1% not doing anything (Figure 1). Most respondents (80.2%) said drugs were more expensive during the COVID-19 outbreak than before, 15.1% said the prices were the same, and 4.7% said drugs were cheaper during the pandemic (Table 3).

Comment [D5]: instead to go to the hospital

Table 3: Use of healthcare services during COVID-19 lockdown

Variable	Response	n (%)
Before the COVID-19 outbreak, did you or your family member visit a clinic or hospital when sick?	Yes	172 (44.9)
	Sometimes	55 (14.4)
	No	156 (40.7)

During the COVID19 outbreak, did/will you/family members go to the hospital or clinic if you are sick?	Yes	62 (16.2)
	Maybe	76 (19.8)
	No	245 (64.0)

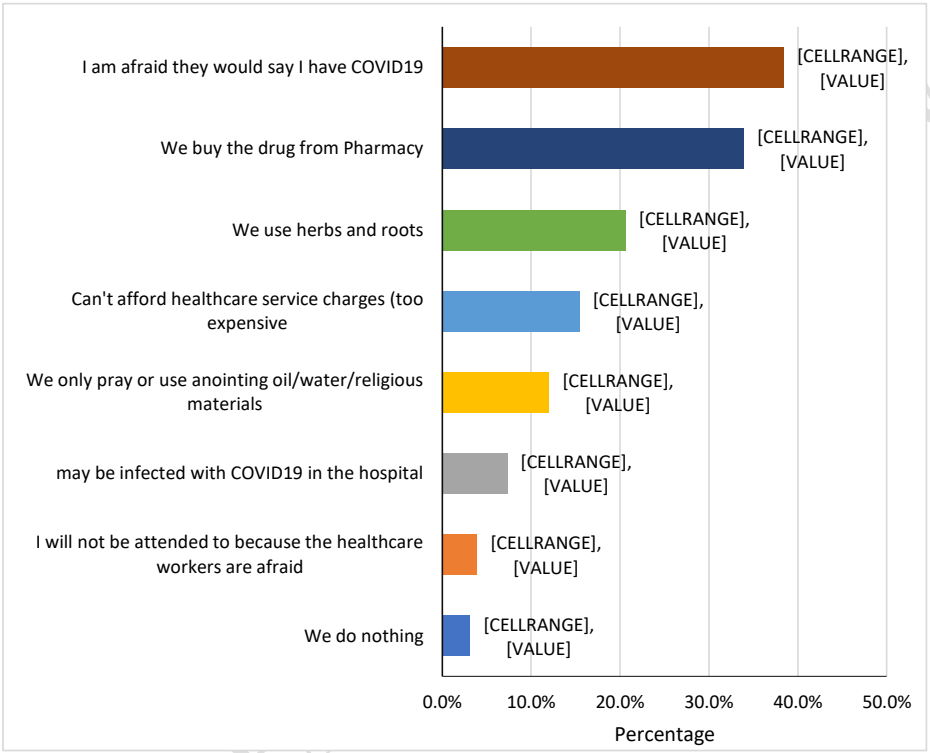

Figure 1: Reasons why respondents would not go to hospitals during COVID-19

It shows that only 17.9% of those knowledgeable about COVID-19 would go to the hospital during the COVID-19, 44.7% said they might go, while 15.4% of those who were not knowledgeable about it COVID-19 would use healthcare facilities ($p<0.001$). Most study respondents (83.0%) who would not go to hospitals for treatment were afraid they would be diagnosed with the COVID-19, while 19.1% who were not scared agreed to use the hospital for treatment. A significant number of respondents (86.7%) also believed healthcare providers would not attend because healthcare workers are afraid, while only 16.8% did not think this and visited hospitals for treatment. Due to expensive services, 67.8% chose to abandon hospitals, while 17.6% still sought therapy in clinics. Many respondents (85.7%) were afraid of being infected with COVID-19, so they would not use healthcare services.

In comparison, this belief did not affect a low percentage of other respondents (16.9%). Respondents who bought drugs from the pharmacies (77.7%) were not interested in seeking hospital services, and respondents who did not buy medicines and went to the hospital were 23.7%. Herbs and roots were used by most respondents (70.9%) to avoid using healthcare facilities; still, respondents that did not use herbs also significantly avoided hospitals (62.2%). Respondents that only pray and use anointing oil made up a significant rate (84.8%) of people not making use of medical facilities during the lockdown; even those that do not pray (58.3%) still significantly avoided healthcare centers. Respondents that did nothing and still did not go to the hospital were 64.2%, and those that visited a clinic or hospital before COVID-19 significantly avoided hospitals (61.0%) during the outbreak. A

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Comment [D7]: verify the percentage

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majority of 70.0% of respondents believed COVID-19 was real but still did not visit hospitals, while 18.9% of respondents who did not believe in the disease existence attended hospitals for treatment (Table 4).

Table 4: Association between knowledge and the use of healthcare facilities during COVID-19 outbreak

		During the COVID-19 outbreak, will you go to the hospital if you are sick?			
		Yes	**Maybe**	**No**	**P-value**
Overall Knowledge	Good	22 (17.9)	55 (44.7)	46 (37.4)	
	Poor	40 (15.4)	21 (8.1)	199 (76.5)	<0.001*
I am afraid they would say I have COVID19	Yes	17(11.6%)	8(5.4%)	122(83.0%)	
	No	45(19.1%)	68(28.8%)	123(52.1%)	<0.001*
I will not be attended to because the healthcare workers are afraid	Yes	0(0.0%)	2(13.3%)	13(86.7%)	
	No	62(16.8%)	74(20.1%)	232(63.0%)	2.430
Services are too expensive during this period	Yes	5(8.5%)	14(23.7%)	49(67.8%)	
	No	57(17.6%)	62(19.1%)	205(63.3%)	<0.001*
I may be infected with COVID19 in the hospital	Yes	2(7.1%)	2(7.1%)	24(85.7%)	
	No	60(16.9%)	74(20.8%)	221(62.3%)	<0.001*
We buy the drug from Pharmacy	Yes	2(1.5%)	27(20.8%)	101(77.7%)	
	No	60(23.7%)	49(19.4%)	144(56.9%)	<0.001*
We use herbs and roots	Yes	11(13.9%)	12(15.2%)	56(70.9%)	
	No	51(16.8%)	64(21.1%)	189(62.2%)	<0.001*
We only pray or use anointing oil/water	Yes	5(10.9%)	2(4.3%)	39(84.8%)	
	No	57(16.9%)	74(22.0%)	206(61.1%)	<0.001*
We do nothing	Yes	0(0.0%)	5(41.7%)	7(58.3%)	
	No	62(16.7%)	71(19.1%)	238(64.2%)	1.940
Before COVID-19 visit a clinic or hospital when sick	Yes	48(27.9%)	19(11.0%)	105(61.0%)	
	No	13(8.3%)	20(12.8%)	123(78.8%)	
	Sometimes	1(1.8%)	37(67.3%)	17(30.9%)	<0.001*
Is COVID-19 real	Yes	30(15.0%)	30(15.0%)	140(70.0%)	
	No	24(18.9%)	20(15.7%)	83(65.4%)	
	Not sure	8(14.3%)	26(46.4%)	22(39.3%)	<0.001*
Total		62 (16.2)	76 (19.8)	245 (64.0)	

***** Significant at *P* = .05

DISCUSSION

This study also reported how COVID-19 affected access to healthcare services. The number of respondents who went to the hospital/clinic during the COVID-19 pandemic declined compared to before the virus. A significant number of respondents were reported to be afraid of being diagnosed with COVID-19. Many believed the virus was unreal in Nigeria. The negative belief that the media exaggerated the numbers makes individuals avoid health centers in fear of being taken as a COVID-19 patient. Vanguard [26] reported how Nigerians were afraid of accessing health centers due to fear of contracting COVID-19 when testing and being isolated as a result. This report further stated how malaria killed more Nigerians scared of accessing health care due to similarities between both diseases [27]. This study also found many respondents self-medicated, buying unprescribed drugs from the pharmacy to avoid healthcare centers. This result still revolves around the fear and lack of trust in the Nigerian health care system. It has even been reported how COVID-19 exposed Nigeria's wobbling healthcare system, emphasizing the continual deterioration of government health centers unable to provide adequate services[28]. This outcome, coupled with fear of being wrongly diagnosed, may discourage individuals from accessing healthcare services during the pandemic lockdown.

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The study also reported respondents not being able to afford the increased healthcare charges due to COVID-19. The pandemic led to increased medicine prices, which may be due to unavailability

because of increased demand for medical attention worldwide and restrictions in transporting goods and services. Fayehun *et al.* [29] supported this finding by reporting how the pandemic influenced healthcare services. Some Nigerians have to negotiate the prices of drugs at the point of sale and take their medications in smaller doses to make them last longer, all due to the disruption in the supply chain resulting from COVID-19 [30]. Briggs & Kattey [31] also reported how parents expressed the increased cost of accessing healthcare services for their children, drug shortages, stock-outs, and purchasing medications at inflated prices, particularly at private-owned medicines stores.

Respondents were also recorded to have resulted in traditional treatments, using herbs and roots to treat illnesses. The Director-General, Forestry Institute of Nigeria (FRIN), Ibadan, Oyo State, stated how nature had solved problems associated with COVID-19 as people were restricted to their domains, thereby encouraging herbs and herbal mixtures [32]. There were also rumors of herbs that provided immunity against COVID-19, which might have significantly contributed to people using traditional treatment methods. A considerable number of respondents were also reported to have treated illnesses as a spiritual problem, addressing medical issues using anointing oil and other religious materials. This result is not surprising, given the country's high level of religiosity and the role of religious leaders in influencing these beliefs.

Respondents also reported healthcare workers refusing to attend to patients due to fear of contracting the virus. This situation may be regarded as a case of healthcare workers ensuring their safety. The virus requires adequate precautions, and healthcare workers are more exposed, which may justify this result. However, the Nigerian health system has not been sufficient. With the emergence of COVID-19, the need for medical attention has increased, making it harder for health workers due to the flawed healthcare system in the country. The Nation[33] reported how the shortage of staff, inadequate infrastructure and medical equipment, and difficulty attending to non-COVID-19 patients' safety have greatly affected effective medical services. The report further reported how Nigerians are dying of other illnesses due to neglect[34].

Comment [D10]: reference repeated

Comment [D11]: reference repeated

CONCLUSION

This finding shows that healthcare providers' refusal to attend to patients with different ailments may result from the workload and observing safety precautions. These may also be reasons why a significant number of respondents, whether knowledgeable about the use of healthcare services or not, would instead not access the hospital during the COVID-19 outbreak.

ETHICAL CONSIDERATIONS

The ethical research clearance was sought and obtained from Nigeria's National Health Research Ethics Committee with NHREC Approval Number NHREC/01/01/2007-20/01/2021. Approval was also obtained from the LGA authority, as included in the appendices. Information obtained from the respondents was made confidential and was only used for research purposes. The study procedure was adequately explained to each participant, and written consent was obtained from them before administering the questionnaire. Researchers did not collect data that can be used to identify or trace the respondents.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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