Effets de la pandémie mondiale de COVID-19 sur la relation pharmaciens-patients : l'expérience du Nigéria

[1]Dorcas N. Omeire, [2]Samuel J. Bunu & [3]Cecilia I. Igwilo

[1]Unité de pharmacie, Centre médical de l'Université de Lagos, Université de Lagos, Akoka, Lagos, Nigéria
[2]Département de chimie pharmaceutique et médicinale, Faculté de pharmacie, Université du delta du Niger, Wilberforce Island, État de Bayelsa, Nigéria
[3]Département de Pharmaceutique et Technologie Pharmaceutique, Faculté de Pharmacie, Université de Lagos, Akoka, Lagos, Nigéria.

Auteur correspondant : Dorcas Nyalas Omeire
E-mail : nyinnimedo@gmail.com ; Téléphone : +2348032174960

RESUME

Contexte : Après le diagnostic de COVID-19, les personnes infectées doivent être admises dans des hôpitaux et des centres d'isolement désignés pour des soins normaux. À l'heure actuelle, aucun médicament spécifique n'est scientifiquement prouvé pour traiter adéquatement le COVID-19. L'innocuité et l'efficacité des médicaments actuellement en cours d'essais cliniques sont également des facteurs essentiels. Par conséquent, les pharmaciens doivent participer activement à la prise de décisions et aux interventions fondées sur des données probantes pour les médicaments faisant l'objet d'essais cliniques et aider les cliniciens à formuler et à ajuster les régimes de médicaments, à défendre les intérêts du public et à utiliser les technologies de la communication et de l'information pour prendre des décisions liées aux médicaments.

Objectifs : Déterminer les effets de la pandémie covid-19 sur les relations patients-pharmaciens et comment identifier le rôle que les pharmaciens peuvent jouer dans la pandémie ainsi que les responsabilités des patients.

Méthodes : L'étude a été conçue comme une enquête transversale menée en ligne à l'aide d'un formulaire Google dans tous les États du Nigéria. Un questionnaire comportant quatre (4) sections a été utilisé pour recueillir des renseignements auprès des participants. Les critères d'inclusion concernaient toute catégorie de pharmaciens et de patients ou de parents de patients qui obtenaient leurs médicaments des hôpitaux et pharmacies communautaires à travers le Nigéria et qui pouvaient également avoir accès à Internet et aux plateformes de médias sociaux. Les données ont été analysées à l'aide de la version 23.0 du SPSS, et du logiciel Graphpad.

Résultats : Les réponses ont été recueillies en ligne et, d'après nos résultats, 77 % des participants ont affirmé que le COVID-19 est un défi. Certains ont rencontré des membres du personnel de santé avec COVID-19 (19%), tandis que d'autres ont visité des hôpitaux ou des pharmacies en raison de symptômes liés à COVID-19, et ont été testés ou soupçonnés de COVID-19 (2%). Moins de la moitié des répondants (21 %) ont noté que le niveau de panique liée au COVID-19 est faible dans leur région, mais 79 % étaient d'avis contraire à cette notion. Il y a eu moins de visites, mais plus d'appels aux pharmacies pendant la pandémie. L'étude a identifié certaines responsabilités attendues des pharmaciens et les obligations du patient pour la prestation satisfaisante de services de soins pharmaceutiques pour prévenir les maladies graves dues au COVID-19.

Conclusion : Conclusion La pandémie a eu des effets négatifs sur la relation pharmaciens-patients tant au niveau local que mondial. Les pharmaciens ont un rôle essentiel à jouer, tout en s'attendant à ce que les patients prennent des mesures responsables et adhèrent strictement aux consignes de sureté.

Mots-clés : *COVID-19, pharmacien, patients, soins pharmaceutiques, Nigéria, pandémie.*

INTRODUCTION

From the confirmation of the index case of COVID-19 in Nigeria on 27th February 2020, the country has been in a great dilemma in trying to combat the rapid spread of the deadly coronavirus.[1] COVID-19 is caused by the novel coronavirus that spreads through droplets released when an infected person coughs or sneezes. A person can become infected by being in close contact with an infected person.[1] The importance of pharmaceutical care in the management of COVID-19 patients cannot be overemphasized. The paradigm of pharmacy practice has long shifted from drug- oriented to the patient-oriented or patient-centered approach. This underpins the value of interactive and interpersonal communication between pharmacists and patients in solving medication-related problems.[2] This notion is contained in the pharmacists' oath usually taken by pharmacy students on graduation and supported by Shao Liu *et al.*, who stated that "Health professionals, including pharmacists, have a social contract with the patients we serve in which the patients give us a level of status not given to non-professionals, and, in return, we agree to put the interest of the patients above our own".[3] In China, where this pandemic started, the pharmacists demonstrated the importance of pharmaceutical care services as a public health pillar by swinging into action in the areas of remote pharmacy services to prevent person -to- person contact in minimizing the spread of infections and provide event-driven pharmaceutical care, amongst others; thus providing an insight to the international community on planning and operating pharmacy services to fight both present and future pandemics.[3] Pharmaceutical care for COVID-19 patients will entail some level of palliative care; which is a multifaceted, integrated approach to improving the quality of life of adults and pediatric patients and their families facing problems associated with a life-threatening illness such as COVID-19.[4] It focuses on prevention and relief of suffering utilizing early identification, assessment, and treatment of physical, psychosocial and spiritual stressors.[4] Basic palliative care, including relief of dyspnea or other symptoms and social support, should be practiced by all caregivers of COVID-19 patients.[5,6] The first and last point of contact of the patient in almost all health delivery systems is the pharmacist, as such the pharmacist has vital roles to play in the management of illnesses or infections ravaging mankind.[7] Antiviral medications have many drug interactions which are likely to be a challenge in Covid-19 management, as seriously ill COVID-19 patients tend to have underlying diseases. Therefore, to avoid symptoms aggravation due to drug interactions, pharmacists should be highly vigilant for

potential drug-drug or drug-food interactions, strengthen the management of patients' medication and diet.[7] Humans at all ages can easily be infected with COVID-19. Therefore pharmacists need to particularly strengthen pharmaceutical care services for the special population, like pregnant or lactating women, children, adolescents, and elderly patients. For pregnant patients, it is recommended to follow the Foods and Drugs Administration (FDA) guidelines for the suitable category of medications to use and the ones to avoid for the safety of the patients.[8] Regularly monitor vital signs of patients and fetuses during medication use, and adjust medication regimens if necessary.[9] As the safety and efficacy of antiviral drugs for children and adolescents remains unclear, medication regimens should be formulated carefully. For critically ill pediatric patients, drugs for adults could be considered and the dosage is adjusted.[10] For geriatric patients with impaired immunity, pharmacists should adjust the dosage according to their liver and kidney function, manage medications for secondary prevention, and pay close attention to drug interactions.[11,12] COVID-19 patients with combined underlying diseases are prone to have a high risk of the disease progressing. Medication regimens for those patients are more complicated in general.[13] There are many interactions between antivirals and other drugs that may affect medication efficacy and safety even in healthy subjects.[14] Pharmacists need to be empathic towards patients with complications and underlying diseases and monitor clinical indicators properly.[15] Pharmacovigilance or therapeutic drug monitoring (TDM) should also be strengthened, in the case of those on clinical trial drugs.[16]

Covid-19 patients with rapid disease progression, severe or critical condition, the convalescent plasma therapy (CPT) can be utilized.[17] The plasma of convalescent uses a certain load of viral-specific antibodies through which patients receive infusion to obtain passive immunity and remove pathogens from the blood circulation. CPT is an effective therapy choice and has been successfully applied to the treatment of SARS and H1N1 influenza.[18] The COVID-19 outbreak and the change of daily life after hospitalization, together with the uncertainty about the disease progression has led to anxiety, concern, and excessive pessimism in some patients. Pharmacists should pay attention to the mental health and emotional management of patients during pharmaceutical care.[19] Timely counseling and emotional/psychological support should be provided to help patients properly understand the COVID-19 disease condition and enhance patient confidence.[20] Hospital pharmacists need to assist

clinicians and closely monitor clinical manifestations, and adverse reactions after vaccination and collect data on vaccines effectiveness and safety during clinical trials and pharmaceutical care interventions for those under the premise of medical ethics to promote the clinical research of the COVID-19 vaccines.[21,22] This pandemic has no doubt adversely affected consumers' behavior and professional patterns, hence, the objective of the study was to determine the effects of COVID-19 pandemic on patients-pharmacists' relationship and how to identify the roles Pharmacists can play in the pandemic as well as patients responsibilities across the country.

METHOD

Study design and population

Quantitative research was conducted across Nigeria, West Africa. The study was designed as a cross-sectional survey conducted from 18th April to 22nd July 2020 online across all the states in Nigeria. Data collection was done through the creation of online Google forms and was forwarded to all reachable social media platforms (such as the Nigerian Association of Pharmacists in Academia, Association of Hospitable Pharmacists, Young-Pharmacists Groups, Alumni groups believed to have a pool of patients and relatives, among others) in Nigeria such as Facebook, WhatsApp, Telegram, Gmail (email) and other platforms.

Data collection instrument and procedure

An online survey questionnaire was used due to the current restriction of the movement of goods and persons across the country. Hence, using an online platform was the best option sought. A questionnaire was designed and sent to three clinical pharmacists (Prof. I. Igwilo, Dr. H. Osain, and Prof. S. F. Usifoh) and was vetted and validated for the study. The Questionnaire included section A: participants' consent, demographic data such as gender, age, marital status, and category - whether Pharmacist, patient or patient relative (as some patients may not be able to personally visit the hospital or pharmacy), educational qualification, occupation, and state of origin. Section B: prevalence of COVID-19 and participants' perception of pharmaceutical care services, the impact of COVID-19, the pharmaceutical care provided, and the cost of medications. Section C: pharmacists and patients' relationship (how often they visit and call the pharmacy or the pharmacists, how friendly and confidential is the pharmacist before and during COVID-19), and section D: expected responsibilities of pharmacists and obligations of patients amid the COVID-19 pandemic as perceived by participants. The online survey was developed using published information of Centre for Disease Control (CDC) and Prevention and World Health Organization (WHO) on COVID-19.[23,24] Inclusion criteria was any pharmacists and patients or patient's relative that obtains their medications in hospitals and community pharmacies across Nigeria that could also have access to the internet or social media platforms stated above.

RESULTS

A total of 512 responses were received in the survey period. The data generated were analyzed using the statistical package for social sciences, version 23.0. Data generated from the study were analyzed using SPSS software version 23.03, excel spreadsheet, and Graphpad Instat. A student t-test was performed on the effects of COVID-19 on pharmacists-patients relationship vis-a vise pharmaceutical care services, at p-value < 0.05. at p-value < 0.05. Results are presented as charts, figures 1, figure 2, and frequency table 1, table 2, table 3, and table 4, respectively. The two-tailed P value from the student t-test was 0.9857, which was considered not significant, t = 0.01798 with 58 degrees of freedom and 95% confidence interval.

Table 1. Demographic data of participants

Variable		Frequency (N=512)	Percentage (%)
Gender	Female	276	53.9
	Male	236	46.1
Age (year)	30 – 39	170	33.2
	50 and above	174	34.0
	40 – 49	91	17.8
	19 – 29	77	15.0
Marital status	Married	336	65.6
	Single	158	30.9
	Separated/Divorced	18	3.5
Category	Pharmacist	264	51.6
	Patient	202	39.4
	Patients' relative	46	9.0
Highest Education	BSC/BPHARM	234	45.7
	MSc	206	40.2
	PhD	60	11.7
	OND/HND	12	2.3
Occupation	Civil servant	250	48.8
	Self-employed	93	18.2
	Private sector	74	14.5
	Unemployed	48	9.4
	Retired from active service	47	9.2

Legend: MSc - Master of Science, Ph.D. - Doctor of philosophy, OND/HND - Ordinary/Higher National Diploma, BSC - Bachelor science, BPHARM - Bachelor of Pharmacy, N -Number.

Table 1 above captured the demographic data of all participants in the study. Out of 512 respondents, 54% were female while 46% were males. Participants ranged from the ages of 19-29 (15%), 30-39 (33%), 40-49 (18%) and 50 years and above (34%). Close to half of them were civil servants (49%), while 18% were self-employed. A total of two hundred and two (39%) participants were patients, 52% were Pharmacists and only 9% were patients' relatives.
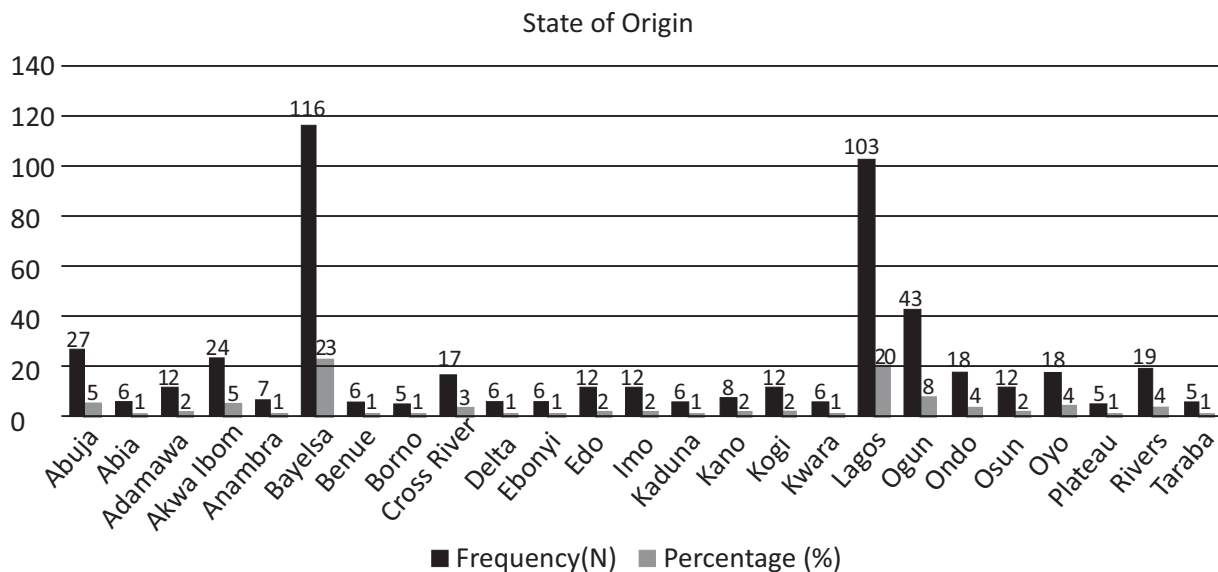

Figure 1. Participants' state of origin

Figure 1 shows the state of origin of the study participants. Bayelsa state had the highest participants with 116 (23%) participants while Borno state had the least number of participants. Other states with high participants include Lagos, Ogun, Abuja, Rivers, Oyo, Cross River, and Akwa Ibom.
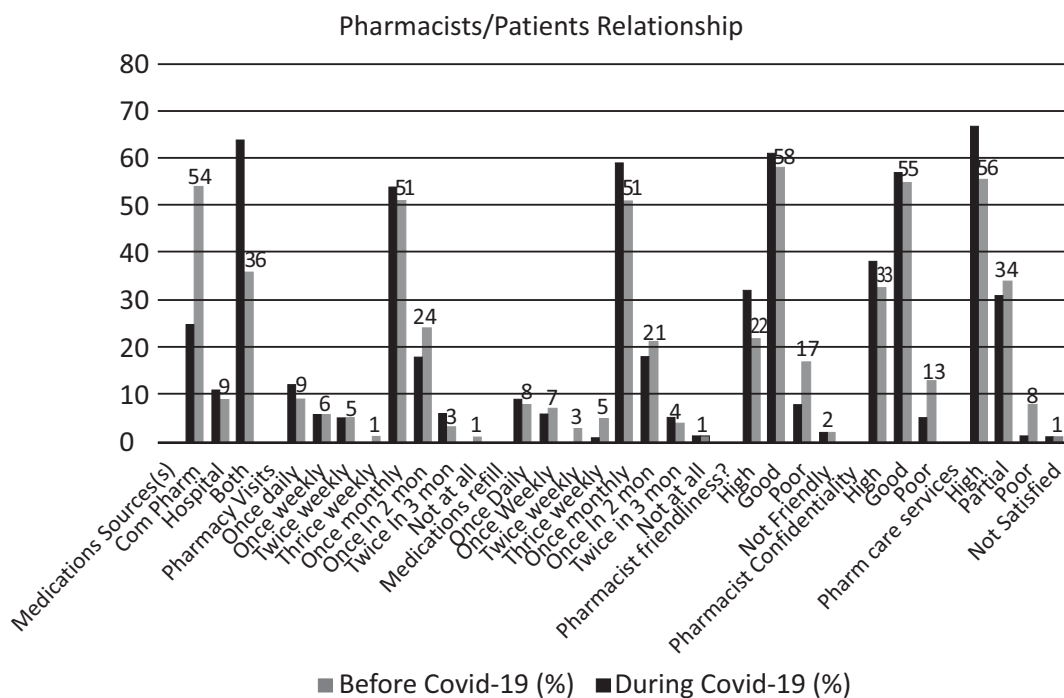

Figure 2. Pharmacists' and Patients' relationship: before and during COVID-19 pandemic. The figure indicates a significant difference between pharmacists/patients relationship before and during the pandemic.

Table 2. Prevalence of COVID-19 and participants perception of pharmaceutical care services

S/N	VARIABLE	YES (n, %)	NO (n, %)	NOT SURE (n, %)
1	Is COVID-19 a challenge in your neighborhood?	392 (76.6)	86 (16.8)	34 (6.6)
2	Have you encountered any health personnel with COVID-19?	98 (19.1)	327 (63.9)	87 (17.0)
3	Have you or your relative been tested or suspected with COVID-19?	12 (2.3)	464 (90.6)	36 (7.0)
4	Have you visited any hospital or a pharmacy due to some symptoms related to COVID-19?	12 (2.3)	491 (95.9)	9 (1.8)
5	Rate the panic level of COVID-19 in your neighborhood			
	High	403 (78.7)	109 (21.3)	0 (0)
	Low	109 (21.3)	403 (78.7)	0 (0)
6	There should be public enlightenment on the pandemic	511 (99.8)	0 (0)	1 (0.2
7	There should be active participation of the healthcare team	509 (99.4)	0 (0)	3 (0.6)
8	There should be strict adherence to NCDC safety guidelines	497 (97.1)	0 (0)	15 (2.9)
9	**Pharmaceutical care provided for you during the COVID-19 pandemic**	**Frequency (N)**		**Percentage (%)**
A	Good	224		43.8
B	Very good	154		30.0
C	Better	87		17.0
D	Poor	47		9.2
10	**Cost of essential medications**			
A	Medications prices are on the increase	439		85.7
B	Medications prices are the same	67		13.1
C	Medications prices have been reduced	6		1.2
D	I can no longer afford my routine medications	0		0

Legend: N/n - number of total valid respondents, NCDC - Nigeria Centre for Disease Control

Table 2 shows the perception of participants on pharmaceutical care services before and during the COVID-19 pandemic. 30% of them stated that pharmaceutical care provided is very good while 44% indicated it has been good. Almost all participants (86%) stated that prices of medicines and related consumables are on the increase.

Table 3. Expected responsibilities of pharmacists amid COVID-19 pandemic as perceived by participants.

S/N	Pharmacists responsibilities to enhance pharmaceutical care services in the COVID-19 pandemic	Frequency (N)	Percentage (%)
1	Patient/public enlightenment, advocacy, and education on the pandemic such as symptoms and other signs to observe	86	16.8
2	Provision of essential medicines delivery at homes and improve patients quality of life	43	8.4
3	Practice basic safety equipment such as soap and hand sanitizer and encourage people to practice washing of hands and social distancing.	41	8.0
4	Pharmacists to be more friendly and empathic to patients	37	7.2
5	Give self-care directives to all households to enable them to take care of themselves if mild symptoms are seen as NCDC care centers are not everywhere and may not be easily accessed.	35	6.8
6	Provision of facemask and other protective aids	35	6.8
7	The pharmacists should protect themselves and patients while providing care for all patients during the pandemic.	35	6.8
8	Enhance the local production of medicines, health education, and disease prevention	34	6.6
9	To ensure, monitor that appropriate drugs/prescriptions are available as to when necessary.	31	6.1
10	Provide consultation via telemedicine through phone or other social media	28	5.5
11	To be more creative and innovative in pharmaceutical care services.	26	5.1
12	Ensure that the medication and healthcare consumables' supply chain is not disrupted	22	4.3
13	Make medicines reachable and affordable	20	3.9
14	Provision of pharmaceutical care readily available	16	3.1
15	Provide testing kits for COVID and educate on the use PPE	12	2.3
16	Maintain effective communication with patients and other healthcare providers	11	2.1

Table 3 shows the expected responsibilities of pharmacists during the COVID-19 pandemic as perceived by participants. Some of the identified roles expected from the Pharmacists include public enlightenment, provision of pharmaceutical care and essential medicines, be more innovative and creative in dispensing and provision of Pharmaceutical care; enhance local manufacturing of drugs and make medicines available and affordable.

Table 4. Expected roles of patients during COVID-19 pandemic from participants

S/N	Patients obligations to enable pharmacists adequately provide pharmaceutical care services duringCOVID-19 pandemic	Frequency (N)	Percentage (%)
1	Strict adherence to safety guidelines	115	22.5
2	Patients should be able to explain their health conditions properly to the pharmacists	57	11.1
3	Contact your pharmacist or healthcare provider whenever any unusual symptoms are noticed	56	10.9
4	Readily answer questions and provide relevant information without reservation	47	9.2
5	Appreciate the efforts of the pharmacist	43	8.4
6	Patients to learn to consult pharmacists electronically	42	8.2
7	Avoid unnecessary self-medication and follow the pharmacists' guideline	37	7.2
8	To be patient, understanding, and tolerant with pharmacists.	31	6.1
9	Learn to surf the internet for rational information	25	4.9
10	Purchase medications from genuine hospitals and registered pharmacies	23	4.5
11	Be willing to use face masks/shields & use hand sanitizer	19	3.7
12	Practice basic hygiene steps, and adhere strictly to them and listen to the pharmacists' advice and precautionary measures given.	17	3.3

Table 4 captures the expected responsibilities of patients amid the COVID-19 pandemic as stated by the participants. Some expectations include strict adherence to safety guidelines, obtain medicines from genuine sources, readily answer and provide relevant medication information, practice safe hygiene, avoid self-medication, and learn to consult the Pharmacist electronically.

DISCUSSION

The study was designed to carefully evaluate the positive and negative impacts of the COVID-19 pandemic on patients' and pharmacists' relationship and how to improve on the essential pharmaceutical care services. Out of the 512 participants (table 1), Bayelsa state had the highest participants with 116 (23%) participants while Borno state had the least number of participants. Other states with high participants include Lagos, Ogun, Abuja, Rivers, Oyo, Cross River, and Akwa Ibom (Figure 1).

A study by Kamrujjaman et al., 2020, established theoretical data presented in terms of basic reproduction numbers regarding the prevalence of COVID-19. Besides data analysis, the authors proposed that humans can control and protect the spread of the virus by creating social isolation, hospitalization, movement restrictions, and physical or social distancing. Data analysis and model results predicted the time boundary to control the epidemic in Italy and Spain. The authors further stated that the current viral epidemic has pushed every health system beyond its elastic limit without achieving definite or obvious solutions. Both theoretical and numerical data analysis demonstrated that the infected population would decrease asymptotically. The proposed model confirmed the efficiency of methods to gradually stop the viral spread by limiting physical person to person contacts and quarantine of infected individuals.[25] Comparing these findings to this current survey, the prevalence of COVID-19, and participant's perception of pharmaceutical care services, 77% of the participants' affirmed that COVID-19 is a challenge in their locations. Some had encountered health personnel with COVID-19 (19%), while others have visited hospitals or pharmacies due to symptoms related to COVID-19, and been tested or suspected with COVID-19 (2%). Less than half of the respondents (21%) noted that COVID-19 panic is low in their area but 79% was in disagreement with this notion.

Participants stated that to manage and prevent COVID-19 spread, there should be active participation of the healthcare team, strict adherence to Nigerian Centre for Disease Control (NCDC) safety guidelines, and adequate public enlightenment on the pandemic. In terms of medication costs, 13% noted that medication prices are the same while 86% stated that there is an increase in medication prices, making it difficult for them to access essential medicines (table 2). These findings are in agreement with a report by Griffith *et al.*, 2018; on the determinants of health-related quality of life after ICU.[26]

The interaction between Pharmacists and patients in terms of how often they visit or call the pharmacy or the pharmacists for drug refills, how friendly and confidential the pharmacist were before, and during the COVID-19 pandemic were analyzed. There was a slight significant statistical difference in consumer (patients) behavior and professional (Pharmacists) patterns before and during the COVID-19 pandemic. The two-tailed P value from the student t-test was 0.9857, considered not significant, t = 0.01798 with 58 degrees of freedom, and 95% confidence interval. The t-test assumes that the columns come from populations with equal SDs. This test suggests that the difference between the Standard Deviations was not significant. Also, the t-test assumes that the data are sampled from populations that follow Gaussian distributions. Before the pandemic, most patients often visited the hospital for their medication, but that has changed drastically as the panic has stopped many from going to the hospital, hence have resorted to nearby community pharmacies for their essential medications (figure 2). This finding is in consonance with the position as contained in a report by Alhazzani *et al.*, 2020; as guidelines on the management of critically ill adults with the coronavirus disease.[27] There were less visits but more phone calls to the pharmacies during the pandemic. Patients affirmed that they still get good pharmaceutical care services from some of the providers (Pharmacists) and were highly satisfied. Pharmacists are highly confidential, evident in the responses regarding the friendliness and confidentiality of the Pharmacists by the patients during the COVID-19 pandemic (figure 2).

The study identified some responsibilities the patient expects from Pharmacists in situations such as presented by the COVID-19 pandemic which are in close relationship with a document issued by the Chinese Pharmaceutical Association, 2020, including developing emergency plans and workflow to control Covid-19, carry out full staff training, focus on health status of all pharmacists, protect pharmacy personnel, strengthen pharmacists' infection monitoring system, ensure adequate cleaning and disinfection in the work environment, strengthen patient management, patient education, exposure management, and medical waste management., etc.[28]

Our study identified public enlightenment, advocacy and education on the pandemic, provision of essential medicines, delivery at homes, provision of facemasks and other protective aids, make pharmaceutical care readily available, education on the use of personal protective equipment (2%), make medicines reachable and affordable, ensure that the medication and healthcare consumables' supply chain is not disrupted, maintain effective communication with patients and other healthcare providers, more empathy for patients, provide consultation via telemedicine through phone or other social media, ensure and monitor that appropriate drugs/prescriptions are available as at when needed, be more creative and innovative in pharmaceutical care services, enhance local production of medicines, health education and disease prevention etc., as the proposed pharmacists responsibilities (Table 3). These guidelines are stated in the NCDC situation report, 2020.[1]

A report by Cuthbertson *et al.*, 2016; outlined the long-term outcomes of pharmaceutical care after critical Illness.[29] Furthermore, in this study, the patients also identified some corporate obligations to enable Pharmacists adequately provide pharmaceutical care services and prevent critical illness due to the COVID-19 pandemic, these include strict adherence to safety guidelines, patronize registered pharmacies, readily answer questions and provide relevant information without reservation, contact Pharmacist or healthcare provider whenever any suspected symptoms are noticed, practice basic hygiene, and adhere strictly to them and listen to the pharmacists' advice and precautionary measures given to them, be willing to use face masks/shields & use hand sanitizer, avoid self-medication but follow the pharmacists' guideline, be patient, understanding and tolerant with pharmacists, learn to consult pharmacists electronically and explain their health conditions properly to the pharmacists (as shown in table 4).

There was no physical interaction with study participants as the study was purely online and not all pharmacists, patients and patient relatives in Nigeria were captures.

CONCLUSION

The pandemic has adversely affected pharmacists-patients relationships both locally and globally. Pharmacists have the responsibility of enlightening the public on the incidence and prevalence of diseases while the patient or general public should be obliged to follow strict preventive measures as would be prescribed by the pharmacists or other care providers. Having these in place, any pandemic or outbreak can be adequately controlled both locally and globally.

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