

# Adaptive Changes in the Working Environment of Community Pharmacists during the Covid-19 Pandemic in the Kano Metropolis, North-Western Nigeria.

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## ARTICLE INFO

### Article history:

Received 20 September 2022

Revised 17 December 2022

Accepted 31 December 2022

Online 31 March 2023

Published

### Keywords:

Community pharmacy,  
Community pharmacist,  
Work environment,  
Kano-metropolis,  
COVID-19.

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## ABSTRACT

**Background:** Rapid spread of COVID-19 and the resultant strict access to conventional hospitals forced the public to turn to community pharmacies being the most accessible points of primary healthcare, thus overloading the pharmacy services. This study aims to assess the coping strategies and adaptive changes in the work environment of community pharmacists in Kano Metropolis, North-Western Nigeria during the lockdown periods due to the COVID-19 pandemic

**Methods:** A questionnaire-based cross-sectional study was carried out across selected community pharmacies within Kano Metropolis, North-Western Nigeria. A non-probability (convenience) sampling was used in this study. Convenience sampling also known as availability sampling, here units are selected for inclusion in the sample because they are easiest for the researcher to access. The survey retrieved relevant data from the participants, including socio-demographic data and changes in the work environment during the COVID-19 pandemic lockdown periods. Data were analysed using IBM SPSS version 23.0.

**Results:** A total of 97 licensed pharmacists responded to the survey. Majority of the pharmacists (73.2%) reported increased workload, caused mostly by more prescriptions, and higher demand for safety equipment, antiseptics, and disinfectants. Moreso, 79.4%, reported higher stress levels during the pandemic as compared to the pre-pandemic era. About 89.9% of participants reported adjusting their working conditions to include the use of facemasks as protective equipment which is available in sufficient quantities as reported by 61.9% of pharmacists. The pandemic and subsequent lockdowns aroused concerns in the majority of participants (90.7%) for their health and that of their families. This prompted majority of the community pharmacists (92.7%) to suggest that pharmacists should be authorized to independently renew prescriptions of patients with stable chronic conditions during the COVID-19 pandemic. Likewise, 91.8% supported the idea that pharmacists should be authorized to participate in the COVID-19 immunization process to widen coverage.

**Conclusions:** The COVID-19 pandemic resulted in an increased workload and altered working conditions of community pharmacists in Kano metropolis of North-Western Nigeria. This prompted pharmacists to professionally re-strategize to accommodate such an increased workload despite being frontline healthcare providers in the healthcare system.

## 1. Introduction

The coronavirus disease (COVID-19) caused by the RNA corona virus, manifests as various symptoms such as fever, breathing difficulty, sore throat, sneezing, dry or productive cough, general weakness, pain, and other mild respiratory diseases in humans<sup>1</sup>. These viruses are common in animals worldwide, but very few cases have been known to affect

humans<sup>2</sup>. The World Health Organization (WHO) used the term 2019 novel coronavirus to refer to a coronavirus that affects the lower respiratory tract of patients with pneumonia-like disease that was identified and first documented in Wuhan, Hubei Province in China in December 2019<sup>3</sup>. The WHO officially named the 2019 novel coronavirus COVID-19, since the organization felt

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calling the virus Wuhan coronavirus was discriminatory<sup>3</sup>, while the current reference name for the virus is severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)<sup>2</sup>. The index case of the coronavirus disease (COVID-19) was reported in Nigeria on the 27th of February 2020 by the Nigeria Centre for disease control<sup>4</sup>. Three days after the confirmation of Nigeria's first COVID-19 case, the genome sequencing results of the SARS-CoV-2 specimen were announced on March 1, 2020. African Center of Excellence for Genomics of Infectious Diseases (ACEGID) at Redeemer University was the first to analyze the sputum taken from an Italian consultant who came to Nigeria through Lagos Airport on February 27th. At the initial stage of the outbreak in Nigeria, the transmission of COVID-19 was limited to influential individuals, and this influenced the nomenclature accorded to COVID-19: "The disease of the rich and mighty"<sup>5</sup>. Later, the community-wide transmission of COVID-19 was recorded, and that led to a spiraling in the number of confirmed COVID-19 cases<sup>6</sup>.

In northern Nigeria, Kano the most populous state in Nigeria recorded its first positive case on 11th April 2020 and as of March 2021, there have been almost 4000 cases, about 3000 recovered with about 100 deaths<sup>4,7</sup>. Lockdown was instituted in the state on 27th April after "unexplained deaths" of 640 people within two weeks<sup>4</sup>. Subsequently, handwashing, social distancing, and masking were made mandatory for all necessary activities in public places across the state. Kano metropolis is one of the largest in West Africa and a hub for commercial activities with an estimated population of some 13 million<sup>7,8</sup>. It is also known for its predominantly Hausa-Fulani population with many traditional rites and practices requiring congregation and close human interactions which may also have accelerated the rate of spread during the first wave of the COVID-19 pandemic.

Community pharmacies due to their ease of access served as the first point of call for the residents within the Kano metropolis during the strict lockdown, which increased workflow, workload, shortages of safety pieces of equipment, and increased job-related stress to the community pharmacists. Due to the strict lockdown imposed during the pandemic, the movement was limited as such non-urgent consultations by physicians were canceled in the hospital. Therefore, community pharmacies were one of the sole points of contact in the primary healthcare system. Moreso, as highly accessible healthcare professionals, community pharmacists were the first point

of contact within the Kano health system for individuals who require advice on COVID-19-related information, health advice, and medication access during the current pandemic. Kano state, North-Western Nigeria, experienced massive unaccounted deaths which were later linked to the spread of the COVID-19 virus. To respond to the crisis, community pharmacists in the Kano metropolis extended their opening hours and services, to the vulnerable populations to ensure continuity of medicine supply and treatments, and thus, this exposed them to occupational stress and hazards. Pharmacists as an integral component of healthcare are known to perform extraordinary roles in earlier pandemics and health crises, such as during Ebola and Zika crises posing global health security risks as well<sup>9</sup>. Likewise, by contributing to the prevention, preparedness, and response to the COVID-19 pandemic, community pharmacists delivered their public health role in dealing with such a crisis<sup>10</sup>. In many countries, community pharmacists have worked in close collaboration with international humanitarian organizations like Red Cross and local community workers to increase their outreach to the public and ensure home delivery of medicines<sup>11</sup>.

Lower middle-income countries, China, Colombia, Pakistan, and elsewhere are in greater need of pharmacists' support where patients are unable to afford the doctor fees for a consultation. In absence of standard treatment, the importance of the provision of pharmaceutical care by pharmacists managing the COVID-19 cases increased by many-folds<sup>12</sup>. Similarly, a different set of attributes than the routine conditions were observed in the pharmaceutical care provided by the Chinese Community pharmacists in dealing with the pandemic situation including maintaining a controlled work environment, provision of information and necessary medical supplies as well as ensuring regular medication and counseling are managed at best to avoid undue patient visits to healthcare facilities. The Community pharmacists in China made use of all possible resources to perform their role as care providers and custodians of patient safety regarding medicine use. They used Mobile applications and coordinated with neighborhood committees and medicine companies to ensure the delivery of medicines to patients in their homes<sup>11</sup>.

The response to the COVID-19 pandemic in countries thus differed drastically. This study aims to identify and describe the changes in the work environment of community pharmacists in the Kano metropolis during the COVID-19 pandemic and to determine the measures adopted as a result of the changes.

## 2. Methods

### 2.1 Study design

A Cross-sectional study was conducted to assess the changes in the work environment of community pharmacists during the COVID-19 pandemic in the Kano metropolis. The study involved the adaptation of a developed and validated questionnaire in a study conducted by Jovičić-Bata *et al.*,<sup>13</sup>. This research was a cross-sectional study, carried out amongst community pharmacists working in community pharmacies in the Kano metropolis North Western Nigeria, between April and May 2021.

### 2.2 Study settings

The survey was conducted across selected samples of community pharmacies in the Kano metropolis for two months (April and May 2021). The inclusion criteria for the study were community pharmacists within the Kano metropolis that were working during the COVID-19 pandemic, and participation in the study was voluntary. The participants were requested to present their current practicing licenses to ascertain that they are pharmacists. A mixed mode involving both face-to-face as well as online surveys developed using a google form was used for the study.

### 2.3 Sampling and sample size estimation

A non-probability (convenience) sampling was used in this study. Convenience sampling also known as availability sampling, here units are selected for inclusion in the sample because they are easiest for the researcher to access. This is due to geographical proximity, availability at a given time, and willingness for researchers to participate using the Raosoft® online sample size calculator with a margin of error set at 5% and a confidence interval of 95%. The minimum number required for the study sample to be a true representation of the population was calculated to be 81.

### 2.4 Data collection tool

Data collection was carried out by adopting a structured and validated questionnaire via face-to-face and online evaluation in English language. A 32-item questionnaire was adapted<sup>13</sup> to assess the changes in the work environment of community pharmacists during the COVID-19 pandemic (Appendix 1). The invitation text provided information on the study rationale and goals, the concept of anonymity, and the voluntary nature of participation in the study. The participants answered questions on general information, workload, workflow,

interactions with clients, work conditions, and personal perceptions of different aspects of their job. The data collected were computed, cleaned, and analyzed using statistical methods. Ethical approval (BUK/CHS-HREC/210) for the conduct of the study was applied and obtained from the College of Health Sciences Research Ethics Committee, Bayero University, Kano.

### 2.5 Statistical analysis

Data were analyzed using SPSS version 23, IBM, Armonk, NY, US. Descriptive statistics frequency and percentage for categorical variables.

## 3. Results

### 3.1 Sociodemographic Data

A total of n=97 participants responded to the survey out of the 112 community pharmacists in the Kano metropolis. The male participants 74.2% (n=72) were more than the females 25.8% (n=25). Most of the respondent 43.3% (n=42) are between 26-35 years of age. The average working experience in years was 8.97. The superintendent pharmacists (few years of practice) are 70.1% (n=68) of the participants. About 80.4% (n=78) of the participants worked in a pharmacy with ≤ 4 pharmacists. Furthermore, 90.7% (n=88) of the community pharmacist had no agreement with National Health Insurance Scheme. Many of the community pharmacies 86.6% (n=84) are located within the urban region while 13.4% (n=13) are located within the suburban region as shown in Table 1

Table 1. Sociodemographic variables

Variable	Frequency (percentage)
Gender:	
Male	72(74.2)
Female	25(25.8)
Years of work experience in community pharmacy: (fill in the number)	8.79 years (mean)
Age:	
15 – 25	4(4.1)
26 – 35	42(43.3)
36 – 45	36(37.1)
45 and above	15(15.5)
Position of pharmacist in the community pharmacy:	
Superintendent Pharmacist	68(70.1)
Chief Pharmacist	29(29.9)
Number of pharmacists in the community pharmacy:	
≤ 4 pharmacists	78(80.4)
5 to 15 pharmacists	16(16.5)
> 15 pharmacists	3(3.1)
NHIS agreement with the community pharmacy:	
Yes	9(9.3)
No	88(90.7)
Pharmacy location:	
Suburban	13(13.4)
Urban	84(86.6)

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### 3.2 Perception of workload by the community pharmacists during the lockdown

Most respondents reported an increase in their workload during the COVID-19 pandemic 73.2% (n=71). The main reason for the increase in workload included an increase in demand for antiseptics and disinfectants 73.9% (n=72), and an increase in demand for protective equipment (mask, gloves) 58.7% (n=57) (Table 2)

Table 2 Perception of workload, during COVID- 19 pandemic among community pharmacists in the Kano metropolis

Variable	Frequency (percentage)
Workload in the pharmacy you work at:	
Decreased	16(16.5)
Increased	71(73.2)
Not changed	10(10.3)
In your opinion, increase in workload is caused by the:	
<i>Participants were asked to choose more than one</i>	
More prescriptions	0
Increase in demand for antiseptics and disinfectants	72 (73.9)
Increase in demand for protective equipment (masks, gloves)	57 (58.7)
Increase in demand for certain groups of medications	47 (48.9)
Increase in demand for dietary supplements	
Increase in demand for compounding of antiseptics and disinfectants	0
Increase in counseling activities on COVID-19-related issues	0
More complex disinfecting procedures	0
Other reasons	0
If your answer to the previous question was “other reasons”, please cite those reasons.	0

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There was an increase in demand for certain groups of medications, reported by 48.9% (n=47) of the participants, notably analgesics 77% (n=75), antimalarials 48.9% (n=47), and anxiolytics 21.3% (n=21). There was also a surge in demand for dietary supplements such as vitamin C 88.4% (n=86), Zinc 78.9% (n=76), vitamin D, and black seed oil 45.8% (n=44) (Table 3).

Table 3. Interactions with clients and availability of drugs during COVID- 19 pandemic among community pharmacists in the Kano metropolis

Variable	Frequency (percentage)
Demand increased for the following medication group: <i>Participants were asked to choose more than one</i>	
Analgesics and antipyretics	75(77)
Antivirals	0
Antimalarials	47(48.9)
Antihypertensives	0
Anxiolytics, sedatives, and hypnotics	21(21.3)
Antiseptics	0
Compounded medicines	0
Galenic preparations	0
Other	0
Demand for medicines did not change	0
If your answer to the previous question was “other”, please note the specific groups of medicines.	0
Demand increased for the following dietary supplement: <i>Participants were asked to choose more than one</i>	
Vitamin C	86(88.4)
Zinc	76(78.9)
Multivitamins/multimineral	0
Bee products - propolis, royal jelly	0
Other	0
Demand for dietary supplements did not change	0
If your answer to the previous question was “other”, please note the specific dietary supplements:	44(45.8)
Vitamin D and black seed oil	

Shortages of safety equipment were reported by 75.1% (n=73) of community pharmacists for antiseptics, disinfectants 69.5% (n=67), dietary products and medicines 37.9% (n=37) and 31.6% (n=31), respectively. To overcome these shortages, surveyed community pharmacists reported communicating with suppliers more often 81.3% (n=79), setting/limiting the number of product units per purchase for clients 22.9% (n=22), and compounding solutions and gels in 22.9% (n=22) as the cases arise (Table 4).

Table 4. Availability of protective pieces of equipment during COVID- 19 pandemic among community pharmacists in the Kano metropolis

Variable	Frequency (percentage)
Since the start of the pandemic, shortages happened of which of these items: <i>Participants were asked to choose more than one</i>	
Antiseptics and disinfectants	67(69.5)
Safety equipment (masks, gloves)	73(75.1)
Certain groups of medicines	31(31.6)
Certain dietary supplements	37(37.9)
There were no shortages	0
What steps did the pharmacy you work at undertook to overcome shortages? <i>Participants were asked to choose more than one</i>	
Compounding (solutions, gels)	22 (22.9)
Frequent communication with suppliers	79 (81.3)
Limiting the number of product units per purchase	22(22.9)

### 3.3 Interaction with clients

About 54.6% (n=53) participants stated that the client's behaviour was more pleasant, 83.5 (n=81) participants reported that clients were calm and respectful in adherence to COVID-19 protocols in the premises, 96.9 (n=94) of the participants said that clients were asking for more advice than before the pandemic. Additionally, 48.5 (n=47) of the participants reported that clients were asking for more advice on disease prevention. Furthermore, 58.8% (n=57) of the participant said they relied on guidelines issued by Nigeria Centre for Disease and Control (NCDC) (Table 5).

Table 5 Interactions with clients during COVID- 19 pandemic among community pharmacists in the Kano metropolis

Variable	Frequency (percentage)
Since the start of the COVID - 19 pandemic, clients behavior in the pharmacy you work in:	
Did not change	20 (20.6)
More pleasant than before	53 (54.6)
Less pleasant than before	24 (24.7)
Since the start of the COVID - 19 pandemic, clients in the pharmacy you work in:	
Calm and respecting	81(83.5)
Did not respect	16(16.5)
Since the start of the COVID - 19 pandemic, clients are asking for advice or counseling:	
More often than before	94(96.9)
Less than before	3(3.1)
Since the start of the COVID-19 pandemic, clients are more often interested in advice or counseling on:	
Rational use of medicines	0
Rational use and/or at - home preparation of antiseptics and disinfectants	30(30.9)
Nutrition	20 (20.6)
Rational supplementation	0
Disease prevention	47(48.5)
Other	
When advising or counseling about COVID-19, you rely mostly on guidelines provided by:	
World Health Organization	27(27.8)
Federal Ministry of Health	9(9.3)
Pharmacists Council of Nigeria	4(4.1)
Nigeria Centre for Disease Control	57(58.8)

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### 3.4 Changes in working condition of the community pharmacists during lock down.

The face mask was the safety equipment used by 89.9% (n=87) of the participants. Safety equipment was available in sufficient quantities to 61.9% (n=60) of the participants in the pharmacies during the pandemic. Then 36.1% (n=36) of the participants stated that they provided the safety equipment for themselves as no government intervention was received (Table 6).

Table 6. Working conditions during COVID- 19 pandemic among community pharmacists in Kano metropolis

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Variable	Frequency (percentage)
What safety equipment do you use while working with clients?	
Face mask	87(89.9)
Gloves	10(10.1)
Protective gown	0
Face shield	0
Glass (or similar material) barrier to clients	0
Disinfecting barrier at the entrance to the pharmacy (shoe sanitizer mat)	0
UV lamp	0
Other	0
Since the start of the COVID - 19 pandemic, safety equipment in the pharmacy you work in were:	
Always available in sufficient	60(61.9)
Not always available in sufficient	37(38.1)
Safety equipment during the COVID - 19 pandemic was:	
Provided by your employer	28(29.9)
Provided by yourself	36(36.1)
Partially provided	31(32.0)
Not provided	2(2.1)

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### 3.5 Changes in personal attitudes of community pharmacists based on their interactions with clients during COVID- 19 pandemic;

About 90.7% (n=88) of participants were concerned about infecting their family members with the COVID-19 virus based on their interaction with the public. The enormous job-related stress undergone by participants during the pandemic was expressed by 79.4% (n=77) of the participants, this is very much expected considering the report compiled above (Table 7).



Table 7. Changes in personal attitudes during COVID- 19 pandemic among community pharmacists in the Kano metropolis

Variable	Frequency(percentage)
Please rate your level of concern for your/your family’s health during the COVID - 19 pandemic:	
High	88 (90.7)
Low	3 (3.1)
Neither	6 (6.2)
How would you rate your job - related stress level during the COVID - 19pandemic?	
High	77(79.4)
Moderate	18(18.6)
Low	2(2.1)

From the data gathered, about68% (n=66) of participants disagreed with not having sufficient time to counsel patients during the pandemic. Inaccurate reporting on the effects of the virus in the media impeded the work of 69.1% (n=67) of participants. The need for a physical barrier to clients in pharmacies, like a glass shield was accepted by 70.1% (n=68) of the respondents. About89.6% (n=87) of the participants also agreed to the need for more compounding processes during the pandemic to ramp up the increasing demand for children's dosages. When the opinion of the respondents was sought on the need for a pharmacist to independently renew prescriptions of chronic diseases during the pandemic, 92.7% (n=90) of the participants were in support of this idea. They also agreed to the need for a pharmacist to actively participate in immunizations for the COVID-19 virus (91.8%, n=89). Table 8

Table 8. Changes in personal attitudes of community pharmacists based on their interactions with clients during COVID- 19 pandemic in the Kano metropolis

Variable	Agree	Disagree	disagree
Because of the COVID - 19 pandemic, I don’t have enough time to devote to clients.	23(23.7%)	66(68.0%)	8(8.2%)
Inaccurate and incomplete reporting about COVID - related issues in the media impeded my work.	67(69.1%)	21(21.6%)	9(9.3%)
Physical barriers (glass or similar material) to clients in pharmacies are necessary.	68(70.1%)	22(22.7%)	7(7.2%)

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Compounding could improve pharmaceutical care during the COVID - 19 pandemic.	87(89.6%)	5(5.2%)	5(5.2%)
Pharmacists should be authorized to independently renew prescriptions for stable chronic conditions during the COVID - 19 pandemic.	90(92.7%)	5(5.2%)	2(2.1%)
Pharmacists should be authorized to Participate in the COVID - 19 immunization process.	89(91.8%)	8(8.2%)	0

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#### 4. Discussion

The current study reported important changes in the work environment of community pharmacists in Kano state, Northwestern part of Nigeria during the COVID-19 pandemic. The younger, male, and less experienced superintendent pharmacists are somewhat more affected by increased workload as against their female or older adult male counterparts during the pandemic. The resultant reorganization and increase in workload subjected the superintendent pharmacists and the less experienced pharmacists to the counter to meet up with the increasing number of clients. Some pharmacies worldwide engaged in increasing administrative tasks, which many perceived as being safer and more resilient<sup>14</sup>.

Although most of the pharmacies within the community (mainly located in the urban area) were having fewer than 4 pharmacists working in a particular community pharmacy, the fewer pharmacists increased the job-related stress on the pharmacists due to increased workload and demands from clients. Urban areas are usually more densely populated than suburban areas thus causing a massive influx of patients during the pandemic. A study by Austin and Gregory,<sup>14</sup> also reported an increased workload by community pharmacists worldwide during the COVID-19 pandemic.

Most respondents reported the dominant reason for an increase in workload to include the increase in demand for antiseptics and disinfectants due to the strong urge to disinfect houses, offices, and all other environments in order to stay clear of the virus. Moreso, an increase in the demand for protective equipment (masks and hand gloves including face shields) can be attributed to the need to protect oneself from infecting others or getting infected from other confirmed cases<sup>1</sup>.

Available information on COVID-19 infection

management as presented by the health authorities, researchers, and the media may also have caused a high demand for such specific medications. In the current study, participants reported an increasing demand for several groups of medications, including analgesics; for body pains and pyrexia associated with COVID-19 infections, and antimalarials as some patients presented with signs similar to malarial infections. The need for anxiolytics was to curtail increasing anxiety and fear of contracting the 'new' virus. Other medications include dietary supplements, vitamin C zinc tablets, vitamin D tablets, and black seed oil in descending order. These could be related to the pressing need to boost immunity by clients and decrease the chances of infection<sup>12-15</sup>.

The shortage of safety equipment, disinfectants, antiseptics, medicines, and dietary products was a global problem<sup>15</sup>. The respondents in this study reported shortages of safety equipment, antiseptics, disinfectants, dietary products, and medicines. This can be expected owing to increasing demand and decreasing supplies of these items following the lockdown imposed by the government and unprecedented inflation of items. To curtail these shortages, the community pharmacists engaged in more frequent communication with suppliers and setting/limiting the number of product units per purchase for clients. Others also compounded solutions and gels as the need arose.

The respondents rated clients' demeanor during the COVID-19 pandemic mostly as more pleasant than before. This could be because community pharmacists present a better chance to help desperate clients at that moment. Participants reported that clients were calm and respectful in observing the COVID-19 protocol within the pharmacies probably because they are more health-conscious during the pandemic. The increased state of panic and trying to stay clear of the disease as much as possible increased the need

to seek more advice from clients on COVID-19 prevention, and treatment as reported by participants. Inaccurate and incomplete information about coronavirus spread rapidly adding to the fear and anxiety of the public<sup>16</sup>. Many pharmacists reported their work to be negatively affected by misinformation on COVID-19 circulated by the media. The result also showed that majority of the pharmacists adhered to the guidelines on COVID-19 issued by the Nigerian Centre for Disease Prevention and Control (NCDC) awareness programs through various media outlets. Studies have shown that recommendations on the use of personal protective equipment (PPE) varied considerably across countries<sup>17</sup>. Protective masks and gloves were most used by the respondents in this survey. Globally, due to supply deficiencies, personal protective equipment was not always available to pharmacists<sup>18</sup>. In the current study, respondents reported occasional shortages of safety equipment.

Pharmacists across the world were highly concerned for their/their families' health during the COVID-19 pandemic<sup>19</sup>, as observed in the study. Worldwide PPE shortages pressured many pharmacies to install physical barriers to reduce the risk of coronavirus infection of pharmacy teams and clients<sup>20</sup>. Most of the respondents believed such barriers are necessary to protect them and by extension their families<sup>16</sup>.

Community pharmacists are one of the most important frontline workers during the pandemic, the increasing demand for services by healthcare personnel warranted the need to allow them to independently renew prescriptions of chronic diseases during the pandemic. To this effect, some countries have already allowed community pharmacists to renew chronic treatment prescriptions during the pandemic<sup>21</sup>. Most of the participants are in support of pharmacists independently renewing prescriptions for chronic disease and actively participating in immunizations of the COVID-19 virus during the pandemic. Community pharmacists present great potential in increasing the number of administered doses of vaccines and reducing the time to achieve high coverage<sup>22</sup>.

## 5. Conclusion

The global COVID-19 pandemic is a public health problem that increased the workload and altered the working conditions of community pharmacists in Kano metropolis of North-Western Nigeria. The Pharmacists had to create some strategies based on their experience as professionals to accommodate the increased workload and altered

working conditions. They also had to develop some measures to avoid being infected by clients and in turn, infecting their families.

## Acknowledgments

The authors are grateful to all staff of the Faculty of Pharmaceutical Sciences, Bayero University, Kano Nigeria, for their support and encouragement throughout the research period.

## Conflict of Interest

All authors declared no conflict of interest

## Funding

No funding was received for this project

Author's contributions SBB conceptualized the original idea and co-wrote the manuscript. SBB and UII designed the study and drafted the questionnaire. ASW and SMJ retrieved data from participants and co-wrote the manuscript. MM and BKL performed the statistical analysis. MA thoroughly overhauled the manuscript and made valuable inputs. All authors read and edited the final copy of the manuscript. UII gave the final approval for the submission of the manuscript.

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