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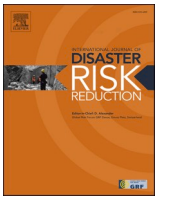

Professionalism during an emergency: Roles and experiences of community pharmacists during the COVID-19 pandemic in Lagos, Nigeria

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ABSTRACT

Lagos, the largest cosmopolitan state in Nigeria, was disproportionately affected by COVID-19, harbouring 39.1 % of all confirmed cases and the highest number of deaths in the country. Community pharmacists played a significant role in the emergency response to the pandemic. However, their professionalism, perception of roles, enablers, and barriers to emergency response have yet to be fully explored. We aimed to explore the community pharmacists' professionalism and experiences on emergency response during the COVID-19 pandemic in Lagos, Nigeria. We conducted a qualitative study using online semi-structured 30- to 45-min interviews in June 2023. We performed a thematic data analysis to identify key themes and patterns. Data saturation was reached at eight participants. Community pharmacists were in most cases the first point of contact by the local communities in seeking information about the disease, first aid or other health services related to COVID-19. Community pharmacists provided health education, vaccination advocacy, counselling to allay public anxiety, administered first aid to patients suspected of COVID-19, and referred them to healthcare facilities. The identified barriers to effective emergency response include the lack of recognition and integration of community pharmacists by the local and national authorities, the lack and/or delay of COVID-19 guidelines, and the lack of clear definition of roles and scope of practice. The study underscores the importance of recognising and harnessing existing systems, both formal and informal, operating in a particular community for a robust response during an emergency to mitigate its impact.

1. Introduction

There is increasing local and global interest in emergency preparedness and response following the effects of COVID-19 pandemic on health systems [1]. Emergencies caused by events such as hurricanes, tropical storms, flooding, wildfires, and earthquakes are occurring at increasing frequency and severity, not least driven by the changing climate, rapid urbanization, and population growth [2–5]. Evidence shows that global warming is shifting the epidemiological triad: environment–host–agent at various levels and

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combinations, increasing the likelihood of occurrence of emergencies from epidemics [5].

The United Nations Office for Disaster Risk Reduction (UNDRR) defines an emergency as *"a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts"* [6].

Although emergencies are mostly unpredictable and indiscriminate, their effects are more pronounced in low- and middle-income countries (LMICs) notably in sub-Saharan Africa, including Nigeria [3]. For example, in the last decade (2013–2023), of the 2.6 billion people exposed to emergencies, the risk of loss to life was seven times higher among people in LMICs compared to those in high-income countries [1,3], suggesting that defective health system factors, including in emergency preparedness, in emergency response, and in workforce professionalism, could be stronger determinants of the impact caused by emergencies than the type and/or severity of the emergencies.

Emergency preparedness refers to a structured and well-defined plan for responding to emergencies based on the local emergency and disaster risk profile, and a structured command and control system. Relatedly, emergency response involves "the provision of rapid and coordinated actions, during or immediately after an emergency, in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the affected people" [5].

The roles played by healthcare professionals during an emergency are crucial and must be clearly defined. Aruru et al. (2021) and Bragazzi et al. (2020) highlight that as different emergencies may require different courses of action, healthcare professionals' roles could change depending on the nature and severity of the emergency [7,8] Individual healthcare professionals and the entire health system must be well equipped with knowledge, skills, and resources at all times for effective and timely response to an emergency.

Furthermore, emergency preparedness applies a set of measures to alert the public and provide information, training, and equipment required for effective emergency response [6] Emergency preparedness means there are specially trained teams with a clear chain of command, resources – including equipment and transport, and clear operational guidelines [3]. These are scarce or non-existent in most LMICs [3,9].

Nigeria, a LMIC and the most populous in Africa with a population of over 200 million, has a fragile health system characterised by a chronic lack of skilled health workforce [10,11] The ongoing massive brain-drain of doctors, midwives, nurses, and pharmacists to Western countries, makes reliance on cadres such as community health extension workers and community pharmacists inevitable, particularly in the face of a substantial emergency like the COVID-19. Lagos state suffered disproportionately from the effects of COVID-19 than any other state in the country. Data from the Nigeria Centre for Disease Control (NCDC) show that 104,286 (39.1 %) of the 266,675 total confirmed COVID-19 cases in the country were from Lagos state [12].

Community pharmacists played a crucial role in managing the COVID-19 emergency in Lagos. Also called pharmacist assistants or pharmaceutical technicians, community pharmacists receive basic training in dispensing and treating minor ailments and primarily work in private drug store outlets, at dispensing rooms, in rural primary healthcare facilities, or under a qualified pharmacist in private or public pharmacies. Their roles include triaging patients, dispensing drugs, and providing health education aimed at disease prevention, health promotion, and advocacy in various healthcare intervention campaigns [13–17]. We chose this cadre for this study as a canvas to explore the professionalism, roles, and experiences of healthcare professionals during an emergency in constrained settings.

The Pharmacy Council of Nigeria (PCN), an agency of the federal government which regulates and controls the practice of pharmacy in Nigeria, and the International Pharmaceutical Federation (FIP) alludes that community pharmacists' roles are diverse, and they include disease prevention, treatment, and health promotion depending on the country context and guidelines [18]. In resource limited settings community pharmacists are involved in providing services such as childhood immunisation, first aid, and referral of patients to higher levels of care [8]. Generally, community pharmacists are much more accessible and acceptable by the local community. In most communities they are the first point of contact during an emergency bridging the community to allopathic services [19]. Sometimes they perform duties similar to those of community health workers [9].

However, the professionalism, roles, and experiences of community pharmacists during an emergency are yet to be fully explored particularly concerning emergency preparedness and response [14,20,21] This lack of clarity regarding professionalism, responsibilities, and roles may cause delays and inefficiencies in responding to an emergency leading to devastating consequences [22].

We conducted a qualitative study to explore the sense of professionalism, roles, and experiences of community pharmacists when responding to the COVID-19 emergency in Lagos, Nigeria.

2. Methodology

2.1. Study design

A qualitative study using online semi-structured interviews.

2.2. Study setting

Lagos, a key cosmopolitan state in Nigeria which was disproportionately walloped by the COVID-19 pandemic [12]. We recruited participants from all five administrative divisions of Lagos State: Badagry, Epe, Ikeja, Ikorodu, and Lagos Island to ensure a geographical representation.

2.3. Study population

Community health pharmacists working in pharmacy outlets during the COVID-19 pandemic. The pharmacy outlets include independent pharmacies with a solitary owner or a chain pharmacy, i.e. part of a franchise of pharmacies spanning several states/cities in the country. The primary demographic data of the eight participants who took part in the interview is presented in Table below. The minimum number of years at work was four, and an average of five years. Five community pharmacists worked in a chain-operated pharmacy, while three worked in an independent pharmacy.

2.4. Sampling strategy

Purposive sampling was used. Following the advice received from Lagos Local Government Authority (LGA), we contacted selected community pharmacists via email addresses provided by Lagos LGA. The inclusion criteria were community pharmacists who were actively practicing during the COVID-19 pandemic (2019–2021), with access to a device such as a smartphone or a personal computer (PC) with internet connection capability and a camera, and working within Lagos State, Nigeria.

2.5. The interview guide

The Interview Guide was developed by the authors with input from senior members of the Public Health staff at the University of Sunderland experienced in qualitative research and from the University of Maiduguri, Nigeria, to ensure local relevance. The Interview Guide is comprised of three sections: (1) Demographic variables (2) Professionalism and perception of roles and experiences during the COVID-19 pandemic (3) Emergency preparedness and response. The questions and related prompts aimed at elucidating how the participants felt as individuals and as health professionals during the COVID-19 and explored their experiences. The Interview Guide was pilot tested on three volunteer community pharmacists in Ibadan, Oyo State, Nigeria and the necessary amends were made. The Interview guide appears as an Appendix.

2.6. Data collection

Through emails, we introduced participants to the study and issued each with the participant information sheet and consent form as email attachments. We asked participants to return a response within 72 hours, and if they consented to the study, we asked them to suggest a suitable time slot for the interview. Once the participant confirmed attendance at the interview, we sent them an email containing the meeting link via *Teams* or *Zoom* and a mobile phone number for those who opted to do the interview via a *WhatsApp* call. In scheduling the interviews, we asked the participants to find a quiet place, one without interruptions or noise for the entire duration of the interview. We also asked participants to test their devices for internet connectivity, preferably WiFi. To ensure consistency only one researcher conducted all the interviews.

We recognise that in-person interview approach is the gold standard data collection approach in qualitative research. However, online qualitative data collection is becoming more common, and the COVID-19 pandemic catapulted its use [23]. To mitigate the potential limitations of collecting the data online, we informed consenting participants of the possibility for a follow up interview to check understanding or ask for some more details that have come to light in the course of data collection.

The interviews took place in June 2023, and each interview lasted about 30–45 min. The recordings were done during the interviews using the" Dictate" function in MS Word (online), which directly transcribes the interview into an MS Word document. In addition, the author used paper and pen to note essential points as reminders for clarifying points or any notable emotions expressed by the participants, such as facial expressions, mannerisms, or a change in voice tone, to enrich the data analysis.

After one interview, the researcher moved to the next available participant until data saturation was reached. Data saturation was reached after eight participants had been interviewed.

Researchers listened to the recorded interviews and read and re-read the scripts to ensure they matched with the transcribed version and a clear understanding of the content. In case of doubt, the interviewer requested another appointment with the participant to clarify the query. This occurred to three participants. Member-check or respondent validation is an essential part of qualitative research to improve the quality and accuracy of data [24]. In familiarising with the scripts, the authors noted down themes that emerged as the initial part of data analysis and used the insights from the emerging themes to enrich subsequent interviews.

Table 1
Basic characteristics of study participants.

Participants	Sex	Age	Administrative division	Years in practice	Type of pharmacy	Highest education level
Participant A	M	40	Ikorodu	6	Chain pharmacy	Bachelor's degree
Participant B	F	29	Badagry	4	Independent pharmacy	Bachelor's degree
Participant C	F	28	Ikeja	5	Chain pharmacy	Bachelor's degree
Participant D	M	34	Ikorodu	8	Independent pharmacy	Bachelor's degree
Participant E	F	30	Epe	4	Chain pharmacy	Bachelor's degree
Participant F	M	33	Lagos Island	5	Independent pharmacy	Bachelor's degree
Participant G	M	34	Lagos Island	7	Chain pharmacy	Bachelor's degree
Participant H	F	35	Ikeja	6	Chain pharmacy	Bachelor's degree

The data were anonymized and any information that would lead to a participant being identified was redacted. The recorded interviews were carefully stored in a password protected PC using the University of Sunderland's cloud server system which only the primary researcher had access to.

2.7. Data analysis

The data analysis was done manually using grounded theory and a thematic approach. The authors read the transcripts several times, each time coding the data. The codes were then structured into themes and patterns. Reading the transcripts, revisiting the codes and identifying themes were repeated several times until the authors were confident that the data were entirely analysed. The final step in the analysis involved decontextualising the data into a flowing narrative by connecting themes, identifying interlinkages, and drawing out meaning and insights. The key quotes for each theme were identified [25].

2.8. Ethical clearance

The study received ethical clearance from the Ethics Committee at the University of Sunderland with ethics clearance ID number RN:018669.

3. Results

The findings present community pharmacists' perception of their professionalism, roles, and events that spurred their experiences during the COVID-19 pandemic in Lagos state, Nigeria. The results are summarised into three identified themes: (1) Professionalism and roles performed by community pharmacists (2) Barriers to community pharmacists' emergency preparedness and response (3) Enablers to community pharmacists' emergency preparedness and response.

3.1. Professionalism and roles performed by community pharmacists

Reflecting on their professionalism and roles, community pharmacists mentioned that in most cases they were the first point of contact and inherently felt the responsibility of caring for the public, calming the anxiety of community members and providing the much-needed information and health education about the disease as crucial responsibilities during the COVID-19 pandemic.

The recognition that community pharmacists were a source of credible information for the public emerged as the most mentioned point. Knowing that the public needed information on which to base their actions about COVID-19 made community pharmacists provide knowledge based on work experience, as noted by Participant A below.

> *"… as healthcare professionals we are exposed to various information concerning the cause and transmission of diseases, and with the knowledge gained from the profession, we were able to take decisive precautionary measures and educate our people. I have dispensed to patients for more than five years, so I can provide education on how to prevent the illness. So, the major role we played apart from dispensing the medication, was dispensing information and educating people on what to do if they contract the disease."* **Participant A**

The quote from Participant C below illustrates community pharmacists' recognition of this role which also involved linking community members to formal health services.

> *We were those who come in direct contact with infected people … we also served as the interface between the public and the bodies in charge of health activities in the country, so we pass on information and help people to understand the directive given to them …"* **Participant C**

Some community pharmacists further reiterated that years of work experience and prior experience with managing similar epidermics such as Lasa fever, HIV, and Ebola virus, provided them with the ability to respond to the emergency despite the lack of specific COVID-19 guidelines.

Based on the type of queries community members were raising and the volume of clients flocking into pharmacies to seek information, reassurance or help, community pharmacists perceived that there was a need to ensure each community member was reassured by calming the anxiety, which was seemingly very high, and that community members were equipped with the knowledge to be safe and free from infection. Participant A and Participant G quotes below helps to contextualise the point.

> *"arrgh, I would say because the COVID-19 was a unique case that most people have not experienced before, even though they have experienced the Lassa* [Lassa fever] *and Ebola virus, but Covid was unique in some ways so people were very anxious. I drafted a safety measures page with the COVID-19 key information printed it on a paper and shared to all … for households to collect it for free. I believed it was the right thing to do as I was the only healthcare unit in close proximity to the local community …"* **Participant G**

> "*I did not experience any barrier at all, I knew exactly what I was supposed to do and how to carry out my role as a healthcare professional during a medical urgency or viral spread or problem such as COVID-19.*" **Participant A**

It was not possible to access the content, or the quality of the information Participant G prepared to inform members of the households. However, the initiative showed the willingness of the community pharmacists to go over and above the prescribed roles in helping the community.

In addition to the community pharmacists' role in the medical management of patients with symptoms suggestive of COVID-19 infection, participants used the opportunity to create awareness about COVID-19 vaccination. The discussion about vaccination started even before the vaccines were made available in Nigeria. After the vaccines became available, some community members already had a positive attitude towards it. Participant F reflects on this point in the quote below:

> "… *when one has symptoms like fever or cough, they are more attentive to the health education and the advice we give. We utilised the opportunity to tell them the advantage of the vaccine in preventing the disease and the need for oxygen …. and equally took part in administration of vaccine for people that were not able to get to health centres or our hospitals to take the vaccine …*" **Participant F**

Apart from community members asking questions about the mode of transmission, risk factors, and symptoms, community pharmacists had to demystify the myths, misconceptions, and misinformation about the disease or the purported harmful effects of vaccination, as Participant C narrated:

> *"… we played the role of helping people understand the specific aspects of the pandemic. Transmission routes and prevention of COVID-19, why vaccination is important. So, every day we have to educate people and correct the myths and misinformation.* **Participant C**

Some community pharmacists were particular about the type of health education community members inquired about. Including preventive measures such as hand washing, social distancing, and face masks. As the quote from Participant H below illustrates.

> *"… and my major role was to educate people and also providing the correct information about the illness. And I had to educate my patients* [clients] *on how to properly do hand washing, wear masks and avoid crowded places in order not to contract it since it was affecting the airways.* **Participant H**

Discussing about alignment of their roles to COVID-19 guidelines (when they became available) from the Federal Ministry of Health (FMoH), PCN, FIP, or the WHO, participants opined that they were in line with the recommendations and guidelines from the organisations when available. However, one observation was that the guidelines needed to be more specific to community pharmacist roles, as Participant D narrates below.

> "… *yes, we complied with the guideline, complied with The Federal Ministry of Health, as well as WHO guideline. But at one point, it became vague what I should be or partake in, especially at the beginning. It's like there was no guideline by the relevant bodies on what each health professional should be involved especially those who are not involved in formal care settings as much such as community pharmacists."* **Participant D**

The lockdown policies in Nigeria limited the community members' free movement, which made the healthcare facilities inaccessible, increasing their reliance on the nearby community pharmacies. Participants reported to have been involved in the medical management of members of the public who fell sick and needed treatment. The treatment provided included first aid and medication to manage fever, flu-like symptoms, body aches, generalised malaise, or pain before referring them to healthcare facilities. Here, Participant F and Participant B reflect on their dual role during the pandemic, issuing first aid treatment and providing members of the public with relevant information on how to prevent COVID-19 transmission through hand hygiene and social distancing:

> *"… so we were able to attend to a lot of persons whose health would have* [otherwise] *deteriorated. If the healthcare facility was not accessible at that point in time, we were able to meet their healthcare needs, and some got better without even going to the hospital, preventing them from being exposed to the virus from the hospital where there were even more patients and usually with more severe disease …"* **Participant F**

> "*First of all, helping people to be safe and providing the essential medications needed at that point and then educating them on how to prevent more spread of the disease. How to stay safe basically through proper hand washing and social distancing to protect their loved ones and what to do if they fall sick …"* **Participant B**

3.2. Barriers to community pharmacists' emergency preparedness and response

Almost all the participants recounted one form of barrier or the other. Unanimously participants mentioned the negative cultural perceptions against COVID-19 vaccination, the belief in traditional healers/medications, the lack of guidelines, protocols, and training on COVID-19 management as key setbacks to managing the COVID-19 emergency.

The belief in traditional healing practices made some community members attend community pharmacies or health facilities very late. The quote from Participant C illustrates the point.

> "*I think one of the barriers I personally faced was related to belief of the community on herbs and related drugs in curing COVID-19 and thus influenced their unhealthy behaviour. For example, there was a case of COVID-19 in a whole family who presented very late. Their perception was that COVID-19 could be prevented by taking daily herbal concoctions.*" **Participant C**

In providing information about the disease and counselling community members on what measures to take, sometimes the community pharmacists found themselves in a cultural dilemma. Participant H gave an example of a member of the public wanting a handshake and if the community pharmacist had refused handshake at all times, it could be interpreted as being judgemental. So, at times, a compromise had to be made. The following quote from Participant H illustrates the point.

Airborne disease in based on assumption, although it wasn't, there was no definitive proof that it was there, but because we were looking at so many things, and sometimes we couldn't deny a handshake, if a reputable member of the community keeps insisting, you know, sometimes it is very hard to deny, it is a cultural expectation, we shook hands, yeah just handshakes sometimes, yeah" **Participant H**

Some participants thought community pharmacists needed better recognition by the relevant authorities for the vital roles played during the pandemic. The finding is supported by the narration of Participant B in the quotes below.

"…, especially in Lagos, where I am, Lagos, Nigeria, we had isolation centres. At that time the isolation centres were hugely manned by physicians and nurses. So, at that point, it felt like the pharmacists were being excluded …" **Participant B**

"*… during the distribution of COVID-19 resources, the people in charge skipped us because our pharmacies are not large or sophisticated as other pharmacies in the community, and thus affected our role in medicine management and first aid.*" **Participant B.**

Another barrier noted by the participants was related to the hierarchical red tape related to the type and/or ownership of the pharmacy than the services provided to the surrounding communities. Participants working at independent pharmacy outlets perceived to have fewer barriers than those in chain pharmacy outlets.

Community pharmacists in independent (private) pharmacies could make confident decisions and felt less restricted in discharging their roles. However, on the other hand, community pharmacists working in chain pharmacies reported experiencing barriers, including work overload, inadequate staffing, inadequate knowledge acquisition due to limited time, and lack of recognition by local government and relevant government agencies, as shown by a quote from Participant E below.

"*I think of the barrier I had during the pandemic is related to my place of work. I run a chain pharmacy, and I have to comply to the company restricts. For instance, I had to select the most suitable role I can take on based on the characteristics of the community people and thus chose to provide education and awareness of COVID-19 even though I would have also wanted to conduct other roles such as first aid and medication.*" **Participant E**

In addition, community pharmacists felt that they were not fully taken on board by the government when responding to the

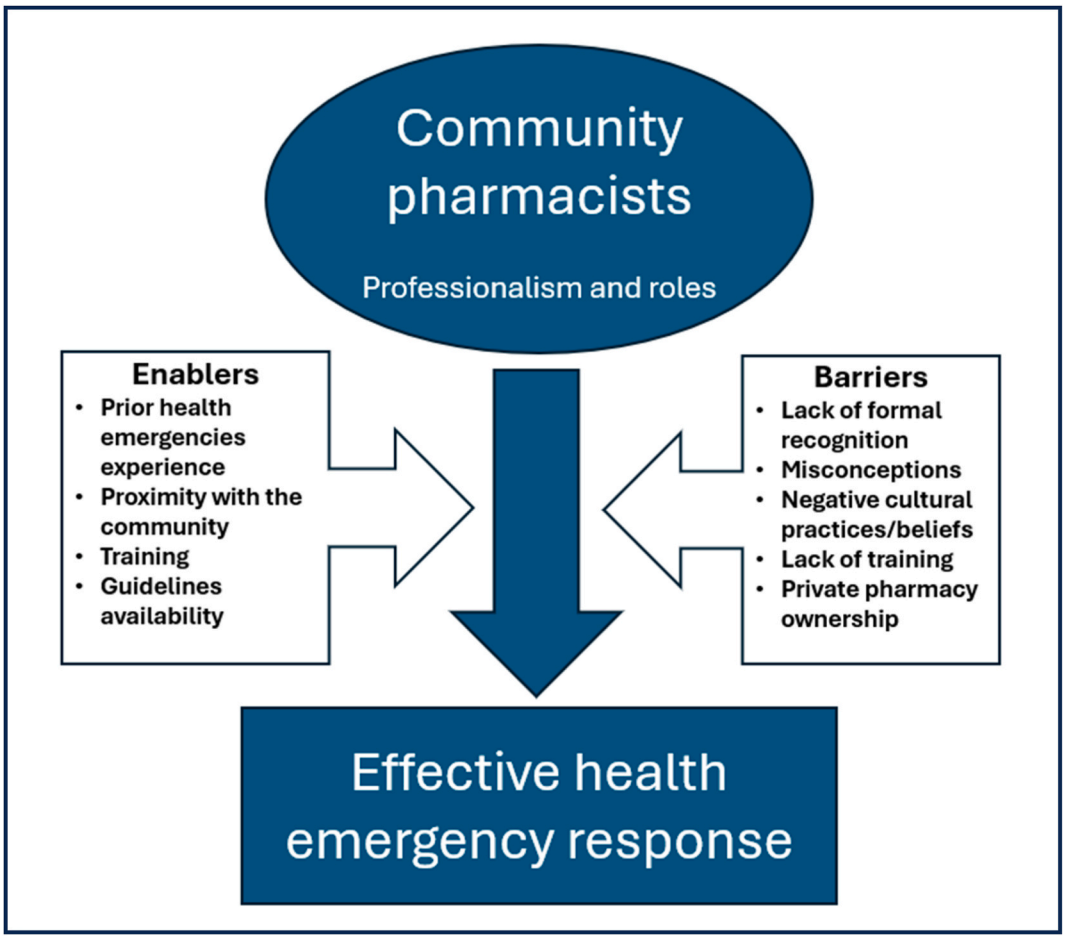

Fig. 1. Enablers and barriers community pharmacists face in effective health emergency response.

emergency. None of the participants was a member of the COVID-19 management teams formed by the local government's primary healthcare authority. Community pharmacists did not have a reliable or effective referral link to primary health care for effective patient referral. As such, the contribution community pharmacists provided was not guided, regulated, or given due recognition. The omission is noted in the narration by Participant E in the quote below.

> "*No, I was not linked up with the official disaster* [emergency] *management team. I did not know what I was expected to do with the cases. Just have to, …just tell them to* go *the government hospitals …"*

3.3. Enablers to community pharmacists' emergency preparedness and response

Participants reflected on the level of emergency preparedness and response before and during the pandemic. In general, the participants thought they had adequate knowledge of emergency preparedness and response but could have done better with a structured, standardised approach to managing the pandemic. Participant B reflects on the level of preparedness and response in the quote below.

> "*Management is key. So, first of all is to quickly identify. What the problem is? And then stay calm and find ways to curb the* [disease] *spread. The possible assailant or whatever. In this case, a pathogen. Reduce the spread of this from one person to another and then those who have been affected look out for a way to take care of them to also further reduce spread to other people that have been exposed. But there was no preparedness because we had not experienced anything like it before. That's all*." **Participant B**

All but one participant attended one or more training activities on COVID-19 during the pandemic. The training programs included seminars, workshops, or conferences on COVID-19 awareness, vaccination, and management. The training activities were mainly conducted online. Participants thought that the training helped ensure their safety and helped improve their ability to manage, educate, and provide medication for suspected COVID-19 cases and respond appropriately to queries from members of the community. The narratives by Participant C, Participant D, and Participant G below help provide more clarity.

> *"There has never been an opportunity to attend any training on disaster* [emergency]*, any disaster training …"Yeah, before the COVID none …"* **Participant G**

> "*Not specifically actually, so it was more of getting ready on the job, more like learning on the job process for COVID COVID-19 management. We have to quickly get ourselves abreast with the right information in order for us to properly direct people in what to do. There was no particular standardised training for us on how to limit progression of disease transmission*" **Participant C**

> "*… they showed us how to make and use hand sanitizers, the beneficial effects of using a mask, the social distancing etc. You know. Also, the self-isolation for those that were positive …*" **Participant D**

Fig. 1 below provides a schematic relationship between community pharmacists' reflection on their professionalism and enablers and barriers to their roles in responding effectively to a health emergency based on themes identified in the study.

4. Discussion

The COVID-19 pandemic affected health systems globally. However, the fragile health systems in LMICs were more affected. In Nigeria, Lagos state was disproportionately affected by COVID-19 compared to other states in the country. Ineffective response to an emergency may result from the lack of resources or emergency preparedness and response or both [2,5,26].

Our study has revealed that community pharmacists in Lagos state did their best to respond to a serious emergency without much formal support from relevant authorities. Members of the public had more direct access to community pharmacists and reached out to them for help. Based on their reflections, community pharmacists showed professionalism, courage, and empathy to the public.

Observations from our study show that community pharmacists' perception of roles was mostly self-informed, not defined by the FMoH, Lagos Primary Health Care Agency, or by the regulatory body – The Pharmacy Council of Nigeria (PCN). The FMoH published an emergency preparedness guideline in December 2020, months into the COVID-19 pandemic [27]. The lack of clearly defined roles left community pharmacists undecided or unsure of the scope of their tasks or of the messages to pass to the members of the public, especially at the beginning of the pandemic. This finding aligns with the study by Pantasri (2022), who observed that the need for clarity of roles during an emergency has the potential for creating conflict among the providers of healthcare and cause delays in the response, reducing the efficiency and effectiveness of the healthcare system emergency response in general [19,28]. Our findings and those of Pantasri show that when roles are unclear, it takes longer for the correct behaviour to translate from the 'intention' to 'action'.

Despite the lack of clarity on roles and responsibilities, community pharmacists in Lagos performed essential roles during the COVID-19 pandemic, such as creating awareness to the public about the disease and the vaccination, demystifying misconceptions and misinformation, counselling to allay anxiety, advocating for safety measures such as hand washing, wearing face masks and social distancing. They also provided first aid and referred patients who were seriously ill to health facilities. Their previous experience was mentioned as a key contributor to their ability in performing these tasks. The findings echo previous studies which observed that during the emergencies, community pharmacists performed their roles efficiently based on competence gained from experience helping to successfully reduce the impact of the pandemic on communities even before official guidelines were in place [29–32]. The significance of this finding is that healthcare cadres not formally part of the routine healthcare system could be more efficient in discharging community-based roles than the formal cadres in virtue of their understanding of the local communities and constant

proximity to the community and should be part of the formal emergency preparedness and response crew [8,33].

For instance, Singh et al. (2020) revealed that during the measles outbreak in the USA, community pharmacists were effective in helping to decrease the workload of public health experts by carrying out vaccination, providing health education, delivering medicines, providing information on available services, and taking core roles in the outbreak management team [34]. Sadly, community pharmacists in our study reported being excluded from Lagos's emergency preparedness and response plan. Similar findings were reported by Basheti et al. (2020) who revealed that community pharmacists and pharmacy students recognised their role during a pandemic very well but were not integrated into the health management plan despite being more accessible to the public [35]. Community pharmacists in our study were well placed to provide both immediate as well as long-term public health needs to the surrounding communities.

The study participants did not recognise any formal emergency preparedness and response plan. Their response was purely based on knowledge of what emergency management entails based on their experience, particularly with managing Lassa fever which is also a common outbreak in Nigeria. The emergency preparedness and response in Lagos could be improved by setting out a clear emergency preparedness and response plan and communicating it to all healthcare workers who come in direct contact with members of the public such as community pharmacists.

Evidence shows that healthcare professionals trained in emergency preparedness and response, which involves the four key steps – preparedness, mitigation, response, and recovery, show better management strategies and are better-prepared to handle emergencies caused by epidermic diseases. In addition, such professionals are quick to actively seek training opportunities and guidelines related to emergency preparedness and response when an emergency happens [21].

The participants in this study recognised and assumed the role of being the first point of contact by the members of the public despite the potential risk of contracting the disease. They provided health education, reassurance, and demystified myths and misconceptions. The importance of trust and the accessibility, acceptability, and familiarity with the healthcare personnel are attributes cited in other studies as essential determinants of trust by the members of the public during an emergency [36,37]. Health authorities must include trusted healthcare workers such as community pharmacists in emergency preparedness and response programs. Such inclusion will help cadres like community pharmacists feel better recognised and valued and improve their motivation which will in turn improve their sense of belonging and autonomy which are key attributes to a motivated health workforce [9].

Furthermore, Mak and Singleton (2017) identify several initiatives by community pharmacists in response to the felt health needs of the public. Such initiatives include staying open late and organising to provide materials such as wipes, glasses, sanitary products, nappies, over-the-counter drugs, and oral rehydration therapy [38]. These initiatives align with the findings from our study, which show that in the face of the emergency, community pharmacists were inclined to offer services as and when required by the members of the public, even those that did not necessarily align with the requirements of the regulatory body – PCN. This observation could help to explain why stakeholders are critical with the FMoH and the Pharmaceutical Board of Nigeria's inability to timely provide COVID-19 management guidelines and for failing to create a collaborative and support milieu for healthcare personnel and other stakeholders during the COVID-19 pandemic [22,27].

Our study highlights the critical role healthcare authorities have to provide clear guidelines, procedures, and legislation defining the roles and scope of healthcare professionals (cadre), the manner of operation, and the communication channels, including the referral process, to ensure that all relevant skills are utilised efficiently in the management of emergencies and that the information passed to the community and back to health authorities is clear and consistent.

Given the role community pharmacists played during the COVID-19 pandemic in Lagos, we recommend that a system be put in place to recognise community pharmacies, and other such cadres, and work out an integration plan into the primary care delivery process. Such integration will enable a coordinated and synergistic approach should another health emergency happen [32,39,40]. Additionally, such integrative approach is needed in other LMIC settings to utilise the available and accessible health workforce more efficiently, provide a stronger linkage to the primary healthcare system and reduce the impact of emergencies.

We acknowledge certain limitations, such as the study's exclusive focus on Lagos city in a vast and diverse country, and its restriction to participants from few Community Pharmacy outlets. Additionally, online interviews may not capture non-verbal cues effectively. Despite these constraints, conducting the research in Lagos, which had the highest burden of COVID-19 in the country was deemed vital.

5. Conclusion

Community pharmacists demonstrated professionalism and played a crucial role in managing the COVID-19 pandemic in Lagos State, Nigeria, a role which was defined more by the demands from the members of the public than from the health system authroties. Community pharmacists were easily accessible and acceptable by the public. They provided first aid services, information and education to the public, demystified misconceptions and promoted COVID-19 vaccination. It is crucial for the relevant health authorities namely, PCN, FMoH, Lagos Primary Health Care Agency, and the FIP to better recognise and integrate community pharmacists to the primary healthcare system. Their roles must be clearly defined and integrated into the primary healthcare emergency preparedness and response plan. In addition, a clear definition or roles and scope of practice would better inform community pharmacists' response to emergencies, improve the referral process and protect both community pharmacists and members of the public they serve. The study underscores the importance of recognising and properly harnessing existing systems, both formal and informal, operating in a particular community for a robust response during an emergency. Such integration will improve the efficiency of the healthcare system in Nigeria and other LMICs in the face of a major health emergency.

CRediT authorship contribution statement

Rukeme Joshua Ogigirigi: Writing – review & editing, Writing – original draft, Resources, Methodology, Formal analysis, Data curation, Conceptualization. **Christabel Ihedike:** Writing – review & editing, Writing – original draft. **Elliot Mbeta:** Writing – review & editing, Writing – original draft. **Kareem Thomson:** Writing – review & editing, Writing – original draft, Supervision. **AbdulLateef Siyaka:** Writing – review & editing, Writing – original draft. **Mselenge Mdegela:** Writing – review & editing, Writing – original draft, Supervision, Methodology.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix. Participants Interview Guide

Interview guide
Section one: Demographic variables
1 What is your gender?
2 What is your age?
3 What is your highest educational level?
4 How long have you been practicing?
5 In what type of pharmacy do you work? (establish if chain or independent pharmacy).
Section Two: Professionalism and perception of roles and experiences during the COVID-19 pandemic
1 As a healthcare professional, what are your roles during a health emergency such as a COVID-19 pandemic?
2 Can you please briefly explain the tasks you performed in response to COVID-19 pandemic?
3 Can you briefly describe any special measures you employed in managing the COVID-19 pandemic?
4 While performing your role(s) how did you relate the role(s) to the Federal Ministry of Health, World Health Organization, or FIP guidelines?
5 What were enablers and barriers to discharging your role (s) in relation to managing the COVID-19 pandemic?
6 How did you approach the use of protective gears such as face masks, gloves, safety boots, and aprons for you and your clients?
Section three: Emergency Preparedness and Response
1 Can you briefly describe the process of health emergency management in relation to your role?
2 Can you briefly describe any special health emergency management training you attended/received in relation to the COVID-19 pandemic?
3 How did you feel about the availability of resources to deal with the COVID-19 pandemic at your place of work?
4 Can you briefly describe how the referral process worked?
5 What lessons did you learn from your experience as a community pharmacist during the COVID-19 pandemic?

Data availability

Data will be made available on request.

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