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The Experience of Managers of Private Optometry Practice during the COVID-19 Pandemic in Nigeria.

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Abstract

Purpose: To provide an in-depth understanding of the experience of managers of private optometry practice in Nigeria during the COVID-19 pandemic.

Methods: The study adopted a qualitative research design with a phenomenological research strategy. Through semi-structured interviews, the experiences of six managers of private optometry practice in Nigeria during the COVID-19 pandemic were studied and thematically analysed.

Results: Data collected through the interviews identified interesting themes and sub-themes. ‘Impact of COVID-19’ emerged as a central theme, while ‘workplace safety’, ‘reduced income’, ‘digital integration’, ‘supply chain and staffing issues’ emerged as sub-themes. The result shows that the participants faced challenges such as the cost of maintaining a safe working space, reduced income, supply chain and staffing issues. The need for digital integration in private optometry practice, versatile staff, and the diversification of supplier networks emerged as key strategies to overcoming the challenges.

Conclusion: Managers of private optometry practice have been faced with some challenges due to the COVID-19 pandemic. This study has identified strategies that can help minimise the negative impact of the COVID-19 pandemic and other future crises.

Keywords: Practice Management; COVID-19 Pandemic; Private Optometry Practice; Learning; Digital Integration.

Introduction

The COVID-19 pandemic has been established as both a global public health and an economic crisis, a pendulum swinging both ways.^{1,2} The optometry practice like the rest of the health sector bears the

brunt from both sides, as a health care provider, and as a business entity.^{1,3,4} The COVID-19 pandemic affected many industries globally,⁵ including the eyewear industry, which had 11% decline, and suffered losses in retail value sales of around

1. Cylus J, van Ginneken E. COVID-19 economic and health financing crisis? *Eurohealth*. 2020;26(2).
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15 billion USD.^{6,7} The decrease resulted from the reduction in demand for optical services, as COVID-19 prevention and safety measures became a top priority for every government, including the Nigerian government.^{1,48} With policies like social distancing, face mask-wearing, non-essential businesses closure, and nationwide lockdown, restricted movement and socio-economic activities.^{1,6,8,9} The Optical retail industry exists within the eyewear industry and comprises of operators who sell and fit prescription lenses, frames, contact lenses and other eyewear accessories from specialist stores also known as eye clinics.⁷ These eye clinics provide a range of additional eyecare services like comprehensive eye examination and the management of eye diseases.¹⁰ The optometry practice plays a significant role in the optical retail industry, and global public health as a health care provider.^{11,12,13} Optometry practice serve as primary eye care facilities and a first point of contact for all vision related issues in countries where it is regulated.¹⁴

Optometrists are eye care practitioners in Nigeria who carry out comprehensive eye examinations, diagnose eye defects and diseases, correct refractive

errors and binocularity anomalies by prescribing spectacles and contact lenses, render visual first aid, and treat minor eye diseases that do not pose a threat to the integrity of the optical system, by using pharmacological agents.¹⁴ Optometry practice contributes significantly to Nigeria's primary health care services by providing primary eye care services in communities.¹⁵ According to the Nigerian Optometric Association (NOA), Optometrists provide over 70% of professional vision care and primary eye services in Nigeria.¹⁶ In 2021, there were over 4500 registered optometrists in Nigeria, with around 80% employed in 892 registered optometry private practices, according to the Optometrists and Dispensing Opticians Registration Board of Nigeria.¹⁷

A majority of private optometry practices (POP) are managed by optometrist, who learn the job of a manager by experience.¹⁸ The COVID-19 pandemic shock is not one which they were trained to tackle. A shock that has brought about some challenges for managers of POP, such as the cost of maintaining a safe working space, reduced income, supply chain and staffing issues.^{19,20,21} The COVID-19 pandemic also created a renewed call for digital integration,

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with emphasis on tele-optometry and the sales of optical products via online channel.^{19,21,22,23,24} The COVID-19 pandemic also created stress and anxiety for many optometrists especially optometrists who are managers/owners of their practice.^{22,25}

It appears no study has been done on the impact of COVID-19 on POP in Africa from a management perspective, and one that also provides useful strategies to overcoming the challenges due to the COVID-19. Hence, this study was set out to provide an in-depth understanding of the experience of managers of private optometry practice in Nigeria during the COVID-19 pandemic, and to identify from their experience strategies needed in navigating the private optometry practice during crises.

Method

Design

A qualitative research design with a phenomenological research strategy was used to

conduct this study.

Participants/Recruitment

The study participants were drawn from managers of private optometry practice across different geo-political regions of Nigeria. Through a purposive sampling method, six managers with diverse characteristic (gender, geography, years of experience, etc.) (See Table 1) were selected based on some pre-set criteria. For instance, only managers working in registered optometry practice and responsible for all key decisions of the practice were selected. In addition, the participants must have at least three years of managerial experience because only participants with rich information and extensive knowledge regarding the subject matter can give a comprehensive account of the situation. (See Table 1) Also, it was only rational for participants to have a pre-COVID-19 experience to make informed judgments on the most significant issues experienced.

Table 1: Selected Study Participants and their Profiles

S/N	Size of practice by average number of patients seen monthly (Vaccine-dependent-recovery era)	Size of practice (Number of Staff)	Location of Company	Years of experience as a manager	Gender	Pseudonyms
1	100 patients	6	Lagos	7 years	Male	Mark
2	70 patients	4	Enugu	8 years	Male	James
3	400 patients	8	Lagos	5 years	Male	John
4	100 patients	6	Abuja	6 years	Female	Sarah
5	60 patients	3	Delta	5 years	Female	Sandra
6	200 patients	10	Ogun	23 Years	Male	Jack

19. K Karthikeyan S, Nandagopal P, R V, Nayak A. Challenges and impact of COVID-19 lockdown on Indian optometry practice: A survey-based study. *J Optom.* 2020 Dec; 393
21. Nagra M, Allen P, Norgett Y, Beukes E, Bowen M, Vianya-Estopa M. The effect of the COVID-19 pandemic on working practices of UK primary care optometrists. *Ophthalmic Physiol Opt.* 2021;41(2):378-392.
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Data Collection

Through semi-structured interviews conducted via Zoom, the experiences of the six participants were captured. Each interview lasted an approximate 45 minutes, and auto-transcription was set before commencing the interviews. The semi-structured interview carried eight questions, two introductory questions, four main interview questions and two concluding questions.

Data Analysis

Thematic analysis was used to analyse the data. The process involved reading the transcripts several times and making detailed notes to identify potentially significant issues and experiences.²⁶ The significant issues were organised and structured in three layers, themes, sub-themes and categories.

Study Rigour

To ensure rigour and a quality research, the criteria of trustworthiness were met. Multiple excerpts from the various interview transcripts were used to discuss the findings, this was to show that the research findings were not based on the researcher's imagination but the opinions of the participants. A pilot study was carried out to ensure that all components of the study methodology was

appropriate and reliable. To ensure no important detail was omitted from the interview, the researcher always summarised the outcome of the interview before the participants. The transferability criterion was met by selecting a diverse list of optometry managers and providing a detailed account of their experience. The researcher's supervisor stood as a peer reviewer to provide external checks on the research process.

Ethical Consideration

Ethical clearance was obtained from the University of Leeds ethical committee before conducting the interviews. The interview process was guided by the principles of justice, respect for all participants' rights, and autonomy as it is the standard practice.²⁷ Hence, written informed consent was sent to all prospective participants via email.

Results

Following a thematic analysis of the interview transcripts, themes, subthemes and categories emerged. Two central themes emerged, they are 'Learning journey of managers of POP in Nigeria', and 'Impact of COVID-19' on optometry practice in Nigeria. (See Table 2)

Table 2: Themes, sub-themes, categories and participants' quotes

Theme	Sub-theme	Categories	Participants' Quotes
Impact of COVID-19	Workplace safety	Concern for personal safety	<i>Sandra- "Well, during the COVID-19, at the earliest days, my practice suffered cos I was really scared to give my patients the attention they needed. But as time went on, I was able to put measures in place concerning how to interact with my patients effectively without being scared of getting COVID-19".</i>



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		Concern for staff's safety	Sarah- "I drafted a kind of safety policy that included but was not limited to wearing nose masks, sanitizing, maintaining social distancing, disinfecting surfaces and equipment, and ensured my staff strictly adhered to it."
		Concern for patients' safety	Mark- "Face masks, hand sanitizers were given freely to patients who didn't have"
		Adapting practice to change	James- "The government said all businesses should close down except non-essential businesses. So, I was open but not fully. We ran half-day operations and attended to only emergency cases."
	Reduced income	Reduced number of patients seen	James- "Although we only attended to emergency cases, but I can say that generally, the number of patients we saw declined, and I think it was due to fear of COVID-19" "It was the same in Nigeria, there was total lockdown. But while other clinics were on lockdown, mine was open. So, because I was one of the few clinics open, that meant that there was more influx of patients." "I was quick to put in place safety measures, and that's why I wasn't afraid to attend to my patients"
		Added Cost of purchasing PPE	Sarah- "Also, to keep in line with the government's guidelines, I had to spend more money on PPE, preventive measures. I bought gloves, facemasks, and some cleaning agents."
	Digital integration	Tele-optometry	Sarah- "We embraced tele-eye care for non-emergency cases... patient would normally call us via WhatsApp, and if need be, we would ask them to send us pictures of their eyes".
			Mark- "I don't think there is much you can do with tele-optometry because you still have to attend to the patient physically to carry out your examination in order to give proper and accurate diagnosis."
		Appointment booking	Jack- "I do my patients registration digitally; we have a software we use, and it is fast and efficient."
		Online sales	Jack- "Yes, I have a Facebook and Instagram account, I sold contact lenses on Facebook during the lockdown. I'm still trying to set up a website for my practice."
	Supply chain issues	PPE unavailability	Sandra- "You know at a time there was scarcity of even face masks, that is the surgical mask type, before people started selling the one made of fabric. And good quality sanitizers were very expensive and scarce as well"
Drugs, frames and lenses shortage		Jack- "the COVID-19 affected me indirectly through my suppliers. I needed more frames, more drugs but the suppliers were on lockdown."	
		John- "So, after examining a patient, I was usually forced to use an alternative drug instead of my first-choice drug. I had to go with a drug with similar generic name"	
Staffing issues	Staff salary reduction	James- "Due to the low income, I had to reduce the salaries of my staff by 50% the alternative was to place them on an indefinite leave of absence without pay"	
	Staff shortage	Mark- "During the early period of the pandemic, my receptionist refused to come to work, she said she was afraid and didn't want to take the risk"	

Learning journey	Experiential	Role-modelling	James- "I worked in Specialist Hospital of X State, and I gained some experience from my boss then"
			Mark- "First, I learnt from my boss during my internship in private practice, that was where I learned some management skills, like signing contract, dealing with HMO (Health Maintenance Organisation), building and managing relationship with suppliers of frames, lenses and optical equipment. Also, during my NYSC, I worked in Specialist Hospital Q State, and I gained some experience from my boss then".
			Jack- "Well, I gained management experience from all the places I worked even before I graduated from Optometry school. I have been able to pick up lessons from my bosses at each place"
		Experimental	Sandra- "Since I didn't work for anyone, my learning has been trial and error in a way, like when I first started stocking inventories, it was usually based on an optimistic guess of the number of patients I hoped to see"
	Networking	Peer-peer knowledge sharing	Sarah- "Also, I have a network of friends, Optometry friends, we discuss periodically on how to improve our individual practices and share ideas" "Optometry is one family you know; I and my classmates have a WhatsApp group, and we talk occasionally and share information"
		Learning from suppliers	Jack- "Sometimes, I gain useful information from my suppliers, like my frame suppliers, they tell me which designs are trending"

Learning Journey of Managers of Private Optometry Practice in Nigeria

Participants were asked to give account of how they acquired management skills, they all answered by describing their learning journey as 'experiential', with most learning from their superiors. A kind of experiential learning known as 'role modelling', which is common among healthcare professions.^{28,29,30} A majority of the participants gave

accounts of the previous places they had worked before becoming a private practice manager. One participant talked about learning management skills such as supplier relationship management during their internship. Managing all supplies and supplier relationship are one of the core responsibilities of an optometry practice manager.³¹ None alluded to been trained formally on management skills post-graduation from the optometry school.

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Mark- “First, I learnt from my boss during my internship in private practice, that was where I learned some management skills, like signing contract, dealing with HMO (Health Maintenance Organisation), building and managing relationship with suppliers of frames, lenses and optical equipment. Also, during my NYSC, I worked in Specialist Hospital Ondo State, and I gained some experience from my boss then”.

Jack- “Well, I gained management experience from all the places I worked even before I graduated from Optometry school. I have been able to pick up lessons from my bosses at each place”

In addition to learning by observing role models, few participants mentioned been part of a social group of managers of POP, where they share information and experience regarding their practice. This form of learning among owners and business managers can be termed ‘networking’.³² Networking among small business owners and managers, has been proven to enhance business performance by aiding in the generation of new information and fresh perspectives needed to create and exploit business opportunities for sustained growth.³²

Sarah- “Also, I have a network of friends, Optometry friends, we discuss periodically on how to improve our individual practices and share ideas.”

“Optometry is one family you know; I and my classmates have a WhatsApp group, and we talk occasionally and share information”

Another participant spoke about learning from his suppliers. Interestingly, knowledge sharing and exchange among a company’s network of suppliers has been proven to be a source of sustainable

competitive advantage.³³

Jack- “Sometimes, I gain useful information from my suppliers, like my frame suppliers, they tell me which designs are trending”

Impact of COVID-19 on Private Optometry Practice in Nigeria

In understanding the experiences of managers of POP in Nigeria during the COVID-19 pandemic, ‘impact of COVID-19 on POP in Nigeria’ emerged as the main theme. Sub-themes also emerged to constitute the main theme, and they are ‘workplace safety’, ‘reduced income’, ‘digital integration’, ‘supply chain issues’ and ‘staffing issues.’ (See Table 2) These sub-themes will be described below to capture the main essence of the experiences of the study participants.

Workplace Safety

The COVID-19 pandemic brought so much anxiety and fear within the workplace, especially among many health care professionals, including optometrists.^{21,34,35,36} So therefore, it was expected to hear most participants describe their personal experiences regarding the workplace during the COVID-19 pandemic as been anxious and afraid. Optometrists require to be in close proximity to the patient to perform many of its tests and examinations, making it more difficult and challenging to attend to patients during the COVID-19 pandemic.¹⁹

19. K Karthikeyan S, Nandagopal P, R V, Nayak A. Challenges and impact of COVID-19 lockdown on Indian optometry practice: A survey-based study. J Optom. 2020 Dec; 393
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Sandra- “Well, during the COVID-19, at the earliest days, my practice suffered cos I was really scared to give my patients the attention they needed. But as time went on, I was able to put measures in place concerning how to interact with my patients effectively without being scared of getting COVID-19”.

Many optometry associations, including the Nigerian Optometric Association (NOA), provided COVID-19 safety guidelines for their members, many private practices also responded by adopting these recommendations.^{21,37,38,39,40} All study participants followed the recommendations of the Nigerian Optometric Association (NOA) for the safety of their patients and staff.

Sarah- “I drafted a kind of safety policy that included but was not limited to wearing nose masks, sanitizing, maintaining social distancing, disinfecting surfaces and equipment, and ensured my staff strictly adhered to it.”

For instance, a participant gave account of how she drafted and implemented safety policy within her practice, which entailed the strict adherence to the wearing of nose masks, regular hand sanitizing, social distancing and other safety measures.

Reduced Income

Managers of POP globally have reported reduced income due to the COVID-19 pandemic.^{20,25,38} Similarly, most of the study participants experienced a reduction in their income due to two

significant factors that stemmed from the impact of the COVID-19 pandemic. According to the participants, these factors were reduced number of patients and the unplanned expenses on maintaining a safe workplace. Just as it was noted by one of the participants, patient reduction was due to their understandable fear of contracting the virus in the clinic.²²

James- “Although we only attended to emergency cases, but I can say that generally, the number of patients we saw declined, and I think it was due to fear of COVID-19”

Interestingly, not all the participants had a reduced number of patients during the COVID-19 lockdown in Nigeria. One participant even had more patients than he had pre-COVID times because he kept his clinic partially open at the very early stage of the pandemic when other clinics around him were scared to open. According to the participant, he was quick to put in place safety measures which gave him the confidence to continue offering his services within his location.

James- “It was the same in Nigeria, there was total lockdown. But while other clinics were on lockdown, mine was open. So, because I was one of the few clinics open, that meant that there was more influx of patients.”

James- “I was quick to put in place safety measures, and that’s why I wasn’t afraid to attend to my patients”

Sarah- “Also, to keep in line with the government’s guidelines, I had to spend more money on PPE, preventive measures. I bought gloves, facemasks, and some cleaning agents.”

20. Ontario Faces Crisis as Millions of Eye Exams in Jeopardy [Internet]. Ontario Association of Optometrists. 2021 [cited 10 November 2021].

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Available from: <https://www.healthprofessionals.gov.sg/oob/home/announcements/Index/optical-services-as-essential-services>

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Digital Integration

Digital integration is another sub-theme that emerged under the theme 'impact of COVID-19'. Tele-optometry, appointment booking, and online sales were the categories that constituted digital integration. (See Table 2) The COVID-19 pandemic necessitated the use of telephones and other communication apparatus in rendering eye care services to patients because it limited the transmission of the COVID-19 virus.^{19,21} Interestingly, most of the study participants utilized tele-optometry during and after the lockdown, especially in the management of cases that did not pose any serious threat to sight.

Sarah-*"We embraced tele-eye care for non-emergency cases...patient would normally call us via WhatsApp, and if need be, we would ask them to send us pictures of their eyes"*.

Tele-optometry was also widely used in the UK during and after the lockdown by a large number of optometrists in the private sector.²⁵ For the UK optometrists, their primary barrier to utilizing tele-optometry was the issue of professional liability, which was also agreed upon by the study participants.²⁵ One of the study participants highlighted the limitations of tele-optometry in internal examinations and in giving an accurate diagnosis. These reservations about tele-optometry are valid, especially in a highly litigious society like the UK.⁴¹ But anywhere, no optometrist would want to be put in a situation where they are likely

to make an error due to the limitations of remote consultation, especially in an industry where patient retention is the primary driver.⁴² Though promising, more will need to be done regarding extending the frontiers of the concept of tele-optometry and how it can be made more reliable for the diagnosis of eye diseases.

Mark-*"I don't think there is much you can do with tele-optometry because you still have to attend to the patient physically to carry out your examination in order to give proper and accurate diagnosis."*

Aside tele-optometry, digital integration for the POP can also mean the introduction of an electronic medical record system. In this study, only one participant spoke about how he utilizes an electronic medical record system in appointment bookings and registration. Others were yet to integrate an electronic medical record and appointment booking system into their practice. However, some of the participants said they were looking into it, while one participant said she did not feel it was necessary at the time.

Jack-*"I do my patients registration digitally; we have a software we use, and it is fast and efficient."*

Integrating an electronic medical record and appointment booking system does not just improve the speed and efficiency of eye care service as one participant said, but it also helps to reduce medical errors, and can serve as a bank for the storage of vital information that can be used to improve the

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19. K Karthikeyan S, Nandagopal P, R V, Nayak A. Challenges and impact of COVID-19 lockdown on Indian optometry practice: A survey-based study. *J Optom.* 2020 Dec; 393
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quality of care and services rendered.⁴³

The COVID-19 pandemic also exposed the need for POPs to adopt multiple channels of selling their products. This would have helped in reducing the losses incurred during the peak of the COVID-19 pandemic, when people's perceived susceptibility and severity to infection were high⁴⁴ Interestingly, only one study participant sold contact lenses via their social media account during the pandemic.

Jack- "Yes, I have a Facebook and Instagram account, I sold contact lenses on Facebook during the lockdown. I'm still trying to set up a website for my practice."

Others were yet to utilize the online channel to sell prescription and non-prescription glasses, especially for an existing patient whose prescription details are known and need a replacement.

Supply Chain Issues

The shortage of pharmaceutical products and PPE was a global problem at the early period of the pandemic.⁴⁵ Unsurprisingly, supply chain issues also emerged as one of the sub-themes under the 'impact of COVID-19.' Most participants spoke about their difficulty in purchasing PPE (Face masks and shields, hand gloves, and aprons) during the early period of the COVID-19 pandemic. One participant talked about the inconvenience he experienced due to a shortage in drug supply during the COVID-19 pandemic.

Sandra- "You know at a time there was scarcity of even face

masks, that is the surgical mask type, before people started selling the one made of fabric. And good quality sanitizers were very expensive and scarce as well"

John- "So, after examining a patient, I was usually forced to use an alternative drug instead of my first-choice drug. I had to go with a drug with similar generic name due to unavailability caused by Covid"

The study participants also spoke about how the COVID-19 pandemic affected the supply of frames and lenses. One of the study participants who usually buys his frames in bulk at international exhibitions said he had to rely on his old stock from 2019 because all international exhibitions were either cancelled or postponed.⁴⁶ Another participant gave account of how he needed more frames, but his suppliers were on lockdown.

Jack- "the COVID-19 affected me indirectly through my suppliers. I needed more frames, more drugs but the suppliers were on lockdown."

Staffing Issues

The COVID-19 pandemic brought many staffing issues, one of which was staff shortages among health care workers.⁴⁷ Staffing issues as a result of the COVID-19 pandemic in Nigeria were also reported by the study participants. Due to reduced income, one of the study participants had to reduce his staff salary by 50% to keep the practice running. Interestingly, there was no employee turnover as result of the salary reduction. Nigeria was already in an economic crisis worsened by the COVID-19 pandemic.⁴⁸ So, it is expected that the staff will be more understanding, considering the

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high unemployment rate in the country and the obvious disruption of business activities as a result of the COVID-19 pandemic. Meanwhile, in the UK and USA, staff of POP were instead laid off or furloughed.^{21,38,49}

James- “Due to the low income, I had to reduce the salaries of my staff by 50% the alternative was to place them on an indefinite leave of absence without pay”

Mark- “During the early period of the pandemic, my receptionist refused to come to work, she said she was afraid and didn't want to take the risk”

Another participant spoke about his staff who refused to show up to work because she was afraid of contracting the COVID-19 virus at the early period of the pandemic, which led to a staff shortage.

Strategies for Navigating the Private Optometry Practice During Crises

Four key strategies were identified based on the experiences of the study participants and the recommendations from existing literatures.^{44,50}

(1) Digital integration: The utilization of online channels and technology-mediated delivery solutions for product sales and service delivery can be a useful strategy in mitigating the adverse effects of low sales due to customers refusing to visit the physical store out of concern for their safety.⁴⁴ Managers of private practice need to integrate digital technology in the area of product sales, appointment bookings, the rendering of certain eyecare services, and patient data management.

(2) Effective Information management: Sufficient and timely information will not only help organisations respond quickly to crises but will be a means of competitive advantage.⁵¹ Therefore, private optometry managers should identify credible internal and external sources of information and keep employees, patients, and all relevant stakeholders updated on any changes that may have been warranted as a result of the crisis. In addition, the contact information of all employees and their next of kin should be updated to have the current data.

(3) Employees health and work policies: Health and safety of employees and patients should be top priority. Private optometry managers should ensure proper safety measures are put in place. PPE should not only be provided to staff and patients but stockpiled from the onset. This is because there is the propensity for PPE to be in short supply due to supply chain disruptions and a high demand for PPE during crisis.⁴⁵ Private optometry managers should also endeavour to train employees to be versatile in order to mitigate any shortage of staff due to the crisis. For example, during the COVID-19 pandemic less important staff of POPs had to be furloughed in order to reduce expenditure.⁴⁹ In other cases, staff were afraid to return back to the clinic for personal safety concerns.²² Therefore, having a versatile staff will help to mitigate any staff shortages during crisis.

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21. Nagra M, Allen P, Norgett Y, Beukes E, Bowen M, Vianya-Estopa M. The effect of the COVID-19 pandemic on working practices of UK primary care optometrists. *Ophthalmic Physiol Opt.* 2021;41(2):378-392.
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(4) Effective Supply Chain Management: Managers of POP need to identify potential challenges to continuing business during a crisis. For instance, they need to stock critical supplies vital to patients care e.g., pharmaceutical products, frame, spectacle and contact lenses, because of expected delays and decreased inventory from suppliers. Another way of mitigating supply issues during crisis is by increasing the network of geographically diverse suppliers (Multiple sourcing) to reduce the risk of supply interruptions and increased lead time during crisis.⁵²

Discussion

One of the arguments of this study was that POP managers learned experientially and were not trained formally to tackle the challenges that arise from crises such as the COVID-19 pandemic. Therefore, the study also sought out to explore the learning journey of managers of POP in Nigeria. The findings suggest that managers of private optometry practice in Nigeria learn by experience and networking. This appears to be similar to how managers of optometry private practice in South Africa and the USA learn.^{18,53} Based on the experiences of the study participants, it was clear that the COVID-19 pandemic had a negative impact on their practice by forcing most of the participants to run skeletal services and only attend to emergency cases just as it was in countries like the UK, Australia, and

the USA where the optometry profession is highly regulated.^{21,38,39} Running skeletal services meant the reduction of patient inflow and income for most of the study participants. Apart from the participant who experienced increased patient inflow, other participants estimated the reduction in patient inflow to be around 50%, and so was their income. Compared to POPs in the USA, a 25% drop in patient inflow was reported during the pandemic's peak.³⁸

Digital integration in optometry practice became popular during the early period of the COVID-19 pandemic, especially regarding tele-optometry and optical product sales. For many optometry practices in UK and the US, tele-optometry was an avenue to continue offering their services to patients, therefore reducing the losses incurred from a decline in patient inflow.^{21,38} Similarly, most of the study participants utilized tele-optometry as a business continuity strategy. But a majority of them were yet to utilise digital technology for the sales of optical products. Some POPs in the USA during the early period of the COVID-19 pandemic were contemplating selling off their practice due to competition from online vendors as they were yet to utilise online channels for product sales.^{22,23} Thus, while POP needs to continue improving their services as a form of differentiation, diversifying their product sales channel also puts them in the competing arena among traditional e-commerce

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companies.^{22,44}

The global shortage of PPE was also another issue experienced by managers of POP in Nigeria.⁴⁵ Similarly, some private optometry practitioners in the UK and USA reported the unavailability of PPE.^{21,38,45} For instance, some practitioners in the UK were not using PPE due to its unavailability.²⁵ Managers of POP who responded quickly by purchasing and stockpiling PPE would have been less affected by the disruption.

Staff of optometry practice refusing to return to work due to fear of contracting the COVID-19 Virus was a common occurrence among the study participants. It was also a common issue faced by managers of POP around the world.^{21,22,38} A shortage in staff can directly affect the quality of services rendered. Aside from the skill gap that has been created, available staff can be overburdened, making them prone to errors, and causing an increase in patient cycle time. And these can negatively impact patient satisfaction.⁵⁴ The challenges of cost of maintaining

a safe working space, reduced income, supply chain disruptions and staff shortages constituted the most significant detail of the experience of managers of POP in Nigeria.

Limitations

Although the six study participants were drawn from diverse backgrounds and spread across different parts of Nigeria to satisfy the transferability criterium, the findings may not accurately represent the experiences of the over eight hundred managers of POP in Nigeria. Therefore, the study supports the idea of having its findings tested using the quantitative method. In addition, the study's findings mainly were compared to that of the UK, USA, and Canada due to a lack of literature on the experiences of managers of POP around the world during the COVID-19 pandemic. Therefore, it would be interesting to compare the study findings to that of other African countries.

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Conclusion

The COVID-19 pandemic impacted the majority of managers of private optometry practice in Nigeria in different ways. They grappled with three main challenges: reduced income, supply chain issues regarding PPE unavailability, optical and pharmacological products, and staff shortages. Some strategies were identified for tackling the challenges: the need for digital integration, adopting multiple sourcing, and prioritizing health and safety of everyone visiting or working in the clinic.

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