Managing in early COVID-19: The Nigerian optometry experience

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Abstract

This study was designed to assess the knowledge, attitude, and practices of Nigerian optometrists and optometry students with regard to the COVID-19 pandemic, while also assessing its impact of their daily personal and professional routines.

The Google Forms suite was used to design an online structured survey/questionnaire. This was sent to Nigerian optometrists and optometry students along with a message soliciting their voluntary participation. This survey took place between 10th April and 15th May 2020. The responses received were electronically transmitted to the authors and populated via Google suite software. Descriptive statistics and inferences were then derived from these data.

A total of 399 valid responses were logged during this study. Of these, 183 (45.4%) respondents were optometry students from the eight optometry education departments in Nigeria. Optometric doctors made up 216 of the respondents. 86% of optometrists reported having cases of COVID-19 in their state. No optometrists reported suffering from the COVID-19 disease while one (0.5%) student had been infected with COVID-19. Twelve percent of student respondents felt educational facilities were adequate to cater for post COVID- 19 resumption, while 21.5% of students felt that the ongoing academic session should be restarted.

The COVID-19 Pandemic has impacted greatly on service delivery among Nigerian optometrists and optometry education. Educational institutions must also adjust to current realities in order to be able to provide safe and adequate training when the academic section resumes or restarts.

Keywords: COVID-19, pandemic, optometrists, optometry

Introduction

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2 or COVID-19) was first reported worldwide in December 2019 (Chen et al., 2020). The index case of an infected individual in Nigeria was an Italian expatriate, as reported on the 27th of February 2020 (Ebenso & Otu, 2020).

In Africa, Nigeria ranked ninth in number of confirmed cases with 165,419 cases, and tenth in the number of deaths from the pandemic (2065 mortalities) at the time of this survey (World Health Organisation, 2020). These numbers pale when compared to the numbers from the western world (Sim, 2020).

The COVID-19 pandemic continues to affect daily life as much as any other single factor in recent times. It has resulted in more than 158.5 million cases and 3.3 million deaths across the world (John Hopkins University, 2021).

The health care industry has taken a major hit from the crisis with estimates ranging from 50–70% of economic losses. Optometric patient care in Nigeria is predominantly provided by private clinics, similar to radio-diagnostic care. These clinics were very vulnerable to economic loss during the lockdown (Cavallo & Forman, 2020).

It is vital that healthcare workers remain in good health of mind and body to be able to render much needed skills in the management of COVID-19 patients, and in fact regular patients who still need health care.

With increasing cases confirmed daily, healthcare workers across the professional spectrum are increasingly exposed to physical and mental health risk. Data already exists that shows the psychological burden healthcare workers are exposed to in such dire times (Wu et al., 2009). Such health risks include direct infection, physical stress, and exposure to injury; and these in turn put families of healthcare workers at risk (World Council Of Optometry, 2020).

Optometrists are primary care providers that serve as the first point of contact for patients in the eye care system. In addition, Nigerian optometrists are responsible for patient consultation, investigation, detection, and management of ocular conditions that pose a risk to the eye. This is often in addition to assessing biometric parameters that directly or indirectly impact the integrity of the visual system like blood pressure, blood sugar, blood, and hormonal panels etc.

The COVID-19 pandemic presented professional and economic consequences for optometrists while also disrupting the academic calendars of optometry students. The use of personal protective equipment (PPE), environmental controls (such as regular disinfection of high contact surfaces) and administrative controls such as screening protocols for patients and staff have been suggested (Seah et al., 2020). It is recommended that PPE use become compulsory for optometrists to safely perform their duties (Centres for Disease Control and Prevention, 2020).

This critical role optometrists play has necessitated the World Health Organization (WHO) to recommend a ratio of one optometrist to 50,000 people by this year 2020 (Raman, 2009). Studies have suggested that optometrists perform as many as 17.2 million eye care visits per year in the United States (Wilson et al., 2015).

With a population of approximately 200 million (Amoo et al., 2020), Nigeria is one of the fastest growing countries in Africa (Gramlich, 2019). However, with about 4000 optometrists, and just eight optometric education departments producing a minimum of 150 optometrists yearly (Oduntan et al., 2014), Nigeria meets both the LV Prasad Eye Institute recommendation of one optometrist to 250,000 people (Holden & Resnokoff, 2002) and the WHO (one Optometrist to 50,000 people) models (Raman, 2009). Yet compared to Asia and Europe, Nigeria lags behind.

Ocular manifestations of COVID-19 include hyperaemia, epiphora, photophobia, episcleritis and increased secretions (Bostanci Ceran & Ozates, 2020). Researchers were able to confirm the presence of COVID-19 in the tears of individuals infected with this virus (Willcox et al., 2020). Transmission of COVID-19 through human tear secretions has recently been confirmed (Wu et al., 2020).

The restrictions of movement and lockdowns of interstate travel has had a direct impact on the number of patients visiting eye clinics. A survey of ophthalmologists in India found that 72.5% of them had stopped services completely during the Indian government-imposed lockdown (Nair et al., 2020).

Beginning on the 19th of March 2020, the Nigerian government ordered a shutdown of federal schools to safeguard the health of the public, including students (Nlebem, 2020). State-run and private schools also closed at various times within a few days of this announcement.

The COVID-19 virus was first reported in December 2019

(Chen et al., 2020). Nigeria experienced its index case on the 27th of February 2019 (Nigeria Centre for Disease Control, 2020). This presented unique challenges for a country with a struggling health care system (Omoleke & Taleat, 2018). However, the occurrence of an outbreak of Ebola virus disease some years earlier (Ebenso & Otu, 2020) meant that the country had some experience already in dealing with similar outbreaks.

The supervisory body tasked with providing health care workers and the general public with information about the pandemic and preventive measures in Nigeria, is the Nigerian Centre for disease control (NCDC). Recommendations given by the NCDC include social distancing, self-isolation, quarantine of suspected/confirmed cases in addition handwashing with soap and use of sanitisers. The COVID-19 pandemic, however, has presented new challenges for healthcare workers, including optometrists.

Optometry education in Nigeria is both academic and clinical. This means there must be in-person instruction, and patient management that involves working in close contact with colleagues and members of the public.

In the past, optometry departments have been partially shielded from the effects of interruptions such as industrial actions and even some holidays due to the flexible curriculums run by professional courses compared with the rigid two-semester yearly sessions in other university programs. This portends a unique situation for clinical programs integrated in the Doctor of Optometry (O.D.) curriculum, as clinical sessions involve patient management. Wide ranging changes will be needed if students are to safely return to such clinical training and external rotation.

Little literature currently exists on the effect of the COVID-19 pandemic on optometrists and optometry education in Nigeria.

This study was a pilot and sought to assess the knowledge of COVID-19 amongst optometrists and optometry students, including preventive measures and regulatory guidelines about the disease. In addition, availability and access to this information was assessed. The impact of the pandemic on personal lives of respondents, optometric services, and remuneration was also assessed. Finally, this study also assessed the effect of COVID-19 on the delivery of optometric education and its subsequent impact on optometry students.

Materials and methods

This was a prospective cross-sectional study.

Nigeria is home to 4500 registered optometrists and about 3500 optometry students (ODORBN, 2020). The sample size was calculated using the Cochran (1977) formula:

$$n = Z^2 pq/d^2$$

where n is the sample size, Z is the standard normal deviate (1.96), p is the proportion of target population expected to have a particular characteristic, $q = 1 - p$, and d is the degree of accuracy required. Since this was a novel study in Nigeria and West Africa, the authors assumed the proportion of the population with the desired characteristic to be 50%. The desired confidence interval was 95% while the precision was set at 5%. Using these parameters, the sample size was set at 384 respondents which is expected to provide representative data of the whole population.

A questionnaire was designed using Google Forms (see Supplementary file). This structured electronic questionnaire was sent out to optometrists through the individual state chairmen of the 36 states in Nigeria including the Federal Capital Territory (FCT). Follow-up questionnaires were also sent by email to optometrists and posted in social media spaces in an effort to attract a broad response. A similar arrangement was made with the executives of the Nigerian Optometric Student Association (NOSA-National) requesting them to help ensure that the questionnaire got to every optometry student from second year and upwards. This distinction was made because classes in the first year of training are handled by the general faculties and not the Department of Optometry/School of Optometry. All students who participated in this survey were pursuing the Doctor of Optometry (O.D.) degree.

The authors had no way of knowing who would respond and as such it was a randomised observation.

Respondents to the questionnaire were either optometry students or optometrists. The survey began with an introduction of the lead researcher and then requested that respondents go through an informed consent section followed by five questions on general demographics and knowledge of COVID-19. The fifth question in this series automatically redirected the respondent to one of five subsequent categories. These categories were:

- Optometry students
- Optometrists – Interns in pre-registration training
- Optometrists – Public service employed
- Optometrists – Practice owners
- Non-optometrists or students

On completion of any of these sections, the survey ended, ensuring that each respondent answered only the questions related to their status. One of these five sections was designed to prevent non-optometrists or students from taking the questionnaire. As soon as a respondent selected that option ("Am not an optometrist but would like to participate"), the survey ended immediately.

In the wake of the pandemic, several regulatory bodies including the Nigeria Centre for Disease Control (Nigeria Centre for Disease Control, 2020)), State and Federal Ministries of Health, and the World Health Organization (WHO) issued measures to help combat the pandemic. At the time of this survey, the now widespread use of face masks had not been issued as a regulatory measure. This survey sought to test optometric doctors' knowledge of regulatory guidelines.

Optometrists responding to the survey were asked a range of questions to gather data on their demographics, knowledge of coronaviruses/COVID-19, the impact of COVID-19 on optometrists, and attitudes of optometrists to conferences and scientific sessions during this early pandemic period. Students were asked to indicate their health status at the time of filling in the questionnaire. Students were also asked to indicate how they were coping academically during the imposed lockdown of universities nationwide.

Student respondents also indicated what measures they felt would make their stay at home academically productive amongst DVDs of study material, online video classes, social media groups to interact with lecturers, textbooks, or if they needed none of the listed suggestions.

Responses were updated in real time to the Google servers and were available to authors for as long as the survey was kept open to respondents. This survey was open from 10th April to 15th May 2020. The results obtained are presented using tables, bar charts, line charts and graphs.

The study adhered to the principles of the 1967 Helsinki Declaration. Participants consented to voluntarily participate in this study.

Results

Demographics of respondents to survey

Data from 404 respondents (202 males and 202 females) were logged into the database. Five respondents were neither optometrists nor optometry students and as such their responses were automatically deleted and a total of 399 valid responses

were logged in this study. Optometrists who responded are classified according to occupation status in Table 1.

Table 1: *Distribution of respondents by occupation and age.*

Occupation	*n*	%
Student	183	45.3
Intern/optometrist under employment of another optometrist	90	22.3
Public service optometrist employed by the government	62	15.4
Optometric practice owner/self employed	64	15.9
Non-optometrist/student*	5	1.2
Age		
18–24 years	180	45.1
25–34 years	112	28.1
35–44 years	77	19.3
45–54 years	22	5.5
55–65 years	8	2.0

Note: *records were deleted.
The average age of participants in this study was 27.91 years SD = 15.14 years.
Total number of participants = 399.

Most respondents were in the 18–24-year age group (see Table 1). This age group is expected to include most of the students and some young optometrists. The 55 years and above group had the fewest respondents.

In total 216 optometrists (97 females (45%), 119 (55%) males) responded to the survey. Of these 22 (10.2%) were unemployed at the time of filling in the questionnaire, 69 (32%) worked in government run hospitals, 120 (55.6%) were privately employed optometrists while five (2.3%) worked in jobs outside optometry.

A total of 183 optometry students (102 (56%) females and 81 (44%) males) responded to this survey.

Responses were received from all eight training institutions with University of Benin providing the most respondents (117), University of Ilorin 41, Ado Bayero University 10, Abia State University six, Imo State University and Federal University Owerri three each, Madonna University two, and Afe Babalola University Ado-Ekiti providing one respondent. This research was based in the University of Benin and that may account for the difference in numbers of respondents.

Knowledge of coronaviruses/COVID-19

An understanding of coronaviruses in general, and not just the novel COVID-19, is important to enable students and optometrists to help educate the public about this relatively new outbreak. Among responding fully qualified optometrists, 215 (100%) reported that COVID-19 is caused by a virus, while one respondent reported that it was a government-fuelled hoax.

Most respondents ((52.9% (211)) believed that coronaviruses were first discovered in 2019, 0.5% (2) reported that they were discovered in 2018, 3.8% (15) said they first appeared in 2020, while 42.9% (171) of respondents selected "a long time ago".

Of the fully qualified optometrists 97 (44.9%) correctly responded that coronaviruses have existed for a long time, 111 (51.4%) reported that coronaviruses were discovered in 2019 while 8 (3.7%) optometrists reported that coronaviruses were first discovered in 2020. Two (1.1%) students responded that COVID-19 started in 2018, 100 (54.6%) students selected 2019, 7 (3.8%) selected 2020 and a further 74 (40.8%) simply selected the option stating: "a long time ago".

Optometrists were asked to identify symptoms associated with COVID-19 and regulatory measures to mitigate the spread of infection. This is especially critical for optometrists who were still working during the outbreak when screening at-risk patients and staying safe themselves. The symptoms most frequently suggested were "Cough" and "High fever" while "Dry mouth" and "Red eyes" were least commonly suggested (see Figure 1). Social distancing (99.5%), self-isolation (93.5%) and hand washing for at least 20 seconds (82%) were the regulatory measures most frequently selected by optometrists (see Table 2).

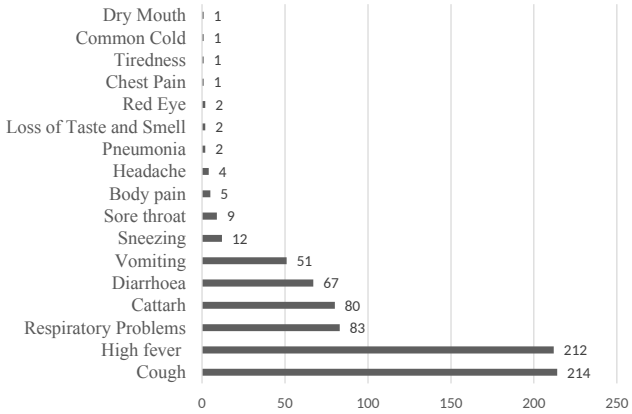

Figure 1: *COVID-19 symptoms identified by responding optometrists.*

When knowledge of PPE was tested by presenting optometrists with a multiple-choice question on what represented an example of PPE, 181 (83.8%) respondents correctly selected gloves, while 21 (9.7%) and 14 (6.5%) wrongly selected hand sanitisers and social distancing respectively.

Table 2: *COVID-19 regulatory measures as selected by optometrists.*

Measure	*n*	%
Social distancing	215	99.5
Self-isolation	202	93.5
Use of water and soap to wash hands for at least 20 seconds	177	82.0
Taking warm water and lime	28	13.0
Warm baths	23	10.7
Taking food with alkaline pH	20	9.3
Total number of respondents	216	

Impact of COVID-19 on optometrists

Optometrists also indicated their recent health status with respect to the raging pandemic. Table 3 shows that most optometrists were either isolating or had no changes to routine. No optometrist reported to be suffering from the COVID-19.

The survey sought to find out if responding optometrists lived in a state that had experienced a case of the novel COVID-19 disease. Their responses showed that 86% lived in states that had at least one COVID-19 case.

Hand sanitisers were the most commonly provided infection control measure by the optometric clinics respondents worked in, while COVID-19 test kits were the least reported (see Table 4). Hazmat suits were not included amongst the options. A combination of items available in functioning optometry clinics were also itemised by respondents in Table 4.

Table 3: *Health status of optometrists and presence of COVID-19 in residing states among optometrists during the period of study.*

Health status	*n*	%
Fine – no changes to routine	100	46.3
Fine – quarantined	14	6.5
Fine – but self-isolating	98	45.4
Ill – other causes	4	1.9
Ill – COVID-19	0	0
Presence of COVID-19 in states where optometrists live		
Yes	186	86.1
No	26	12.0
Don't know	1	0.5
Total number of respondents	216	

Table 4: *Combination of infection control measures made available to optometrists in their clinics.*

Item(s)	*n*	%
Gloves, hand sanitisers, face masks, washstands	136	63.0
Gloves, hand sanitisers, face masks	28	13.0
Hand sanitisers, washstands	13	6.0
Gloves, hand sanitisers, washstands	10	4.6
Hand sanitisers, face masks	5	2.3
Gloves, hand sanitisers, face masks, washstands, COVID-19 test kits	3	1.4
Hand sanitisers only	3	1.4
Washstands only	3	1.4
Face masks, washstands	2	0.9
Gloves, hand sanitisers	2	0.9
Gloves, face masks, washstands	1	0.5
Gloves, washstands	1	0.5
Total number of respondents	216	

Optometrists were then asked to indicate which procedures they had to stop or adjust due to the outbreak of COVID-19. Only nine (4.17%) optometrists reported that there was no change to their routine (see Table 5) with the most frequent alterations to clinical practice being stopping of ophthalmoscopy (52.8%) and contact tonometry (43.5%). These two procedures form the bedrock for glaucoma screening and monitoring for Nigerian optometrists, and it can be implied that there was a reduction in the quality of glaucoma services as a direct result of the pandemic.

Table 5: *Adjustment made by optometrists to clinical practice.*

Adjustment	*n*	%
None, but I adjusted my technique	90	41.7
Contact tonometry stopped	94	43.5
Blood pressure/Blood sugar measurement stopped	29	13.4
External exam stopped	28	13.0
Ophthalmoscopy stopped	114	52.8
All techniques carried out in the same way as before	9	4.2
Total number of respondents	216	

The economic effect of the pandemic was felt by optometrists due to travel restrictions for some patients and a general apathy to healthcare amongst others. During the survey period 109 (49.3%) optometrists were working while 107 (48.4%) responded that they were not working.

Optometrists were asked to describe their patient load during the reviewed period as either normal, less than normal or more than normal. The number of patients visiting their optometrist during this period as compared to pre – COVID-19 pandemic numbers was reduced for 203 (94%) respondents, 11 (5%) optometrists reported no change in patient numbers while two (1%) reported an increase in patient numbers.

Health care businesses (both privately owned and public run) were exempted from locking down during this period by the Nigerian Government. The survey showed that 43.5% (98) of respondents felt that optometric clinics should not remain open during the pandemic, 40.7% (88) felt that optometric clinics should be functional, while 15.7% (34) were indifferent.

Of 216 optometrists responding to the survey, 108 (50%) indicated that their clinics were not closed during the survey period, another 93 (43.1%) reported that their clinics were closed, while 15 (7%) reported that although their clinics were currently functional, they intended to close in the future as the pandemic went on. The majority (60.2%) of these closures took place between 26th of March and 1st of April 2020 (see Figure 2).

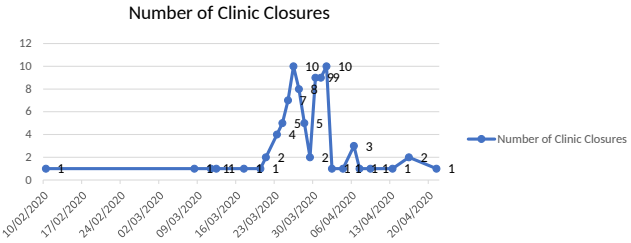

Figure 2: *Respondents' self-reported daily closures of optometric clinics.*

Respondents were asked if optometrists' salaries should be fully paid, prorated or if a fixed cut should be applied during the pandemic. Seventy-six (35.2%) optometrists felt that salaries should be prorated based on clinic income, 100 (46.3%) felt that salaries should be fully paid and 40 (18.5%) felt that staff should take a fixed pay cut.

Impact of COVID-19 on students

Students responding to the questionnaire were required to answer seven questions ranging from their institution of training, their health status during the period surveyed and the effect of the COVID-19 pandemic on their studies, to questions on how they rated their schools' preparedness for continuing training upon resumption.

Fifty-eight (31.7%) students indicated that they were fine and had no changes to daily routine, 62 (33.9%) indicated they were fine but in isolation while one individual was ill with COVID-19 (see Table 6).

Table 6: *Health status of optometry students when filling survey.*

Health status	*n*	%
Fine – but in isolation	62	33.9
Fine – but in quarantine	52	28.4
Fine – no changes to daily routine	58	31.7
Ill – COVID-19	1	0.6
Ill – other causes	5	2.7
(blank)	5	2.7
Total number of respondents	183	

On the question of how they were coping with their studies, 38% (69) of the students reported that their departments had organised online lectures, 39% (71) were engaged in personal study while at home, and 23% (42) were taking a break from studying. Online video classes (21.9%) and social media groups to allow interaction with lecturers (24.6%) were the most frequently suggested measures to help students while at home

during the pandemic (see Table 7).

Table 7: *Proffered measures suggested by students to help academic activities while at home.*

Measures	*n*	%
None	13	7.1
Textbooks only	25	13.7
DVDs of study material only	9	4.9
Online video classes only	40	21.9
Social media groups to interact with lecturers only	45	24.6
DVDs of study material and textbooks	1	0.6
Online video classes and textbooks	1	0.6
Social media groups to interact with lecturers and textbooks	6	3.3
DVDs of study material and social media groups to interact with lecturers	3	1.6
Online video classes and social media groups to interact with lecturers	7	3.8
DVDs of study material, online video classes, and textbooks	1	0.6
Online video classes, social media groups to interact with lecturers, and textbooks	9	4.9
DVDs of study material, social media groups to interact with lecturers, and textbooks	2	1.1
DVDs of study material, online video classes, and social media groups to interact with lecturers	8	4.4
DVDs of study material, online video classes, social media groups to interact with lecturers, and textbooks	13	7.1
Total number of respondents	183	

Importantly, the student respondents were asked to rate the preparedness of their respective universities for social distancing preparedness in terms of lecture halls and clinic spaces on a scale of 1 to 3, where 3 represented very adequate and 1 represented very inadequate. Their opinions are displayed in Figure 3. The average was 2.44 ± 0.6 showing that students on average felt that school facilities were adequate.

Figure 3: *Level of preparedness of training institutions for social distancing.*

Students were also asked their opinion on what school authorities should do with the current academic session when the restrictions were lifted. Most (47.5%) felt the session should pick up from where it was interrupted by COVID-19, 27.3% were indifferent as they were already on holiday when the COVID-19 disease hit the country, while 25.1% felt the entire academic year should be restarted.

Attitude towards Annual Conference/Outdoor Scientific Sessions

The 2020 Annual National Conference of Nigerian Optometrists was billed to take place during the first week of July 2020 and was planned to proceed in person. Only 4% (16) of respondents wanted the conference to go ahead as scheduled without any changes, 56.89% (227) wanted it to be held at a later date, 45 (11.3%) wanted it to be moved to a different venue, and 26.8% of respondents wanted the conference cancelled completely. Two respondents abstained from answering the question.

Given the restrictions on interstate travel and mass gatherings, students were asked if the National Conference organised by the student body (NOSA) should go ahead. The majority (74.3%), represented by 136 students felt the conference should go ahead but at a much later date, 11 (6%) students felt it should be held as scheduled despite the ongoing pandemic while 36 (19.7%) felt that the 2020 students' conference should be cancelled in its entirety.

Discussion

The age demographics in this survey indicate that respondents within the ages of 18–24 formed the largest group (45.1%). This is expected as a majority of students are included in this group. There are also more younger optometrists in Nigeria within this age range as compared to other age groups due to new training institutions that have recently started graduating optometrists (Oduntan et al., 2014).

Optometrists displayed varying levels of knowledge with regards to the pandemic. About 42.9% of respondents correctly responded that coronaviruses were discovered a long time ago while others gave varying incorrect responses. Fully qualified optometrists (44.9%) were more likely to correctly answer that coronaviruses started a long time ago compared to optometry students where 40.8% selected "a long time ago".

Approximately 50% of optometrists were not working during the period surveyed. This was despite an exemption from lockdown directives coming from regulatory authorities. Possible reasons for this may include optometrists preferring to stay at home (to avoid infection) or temporary clinic closures due to reduced patient load. This number is lower than the 72.5% reported for eye care practitioners (ECPs) in another study (Nair et al., 2020). Yet, as early as March 2020, over 200,000 patients had been seen exclusively by optometric clinics in the USA (American Optometric Association, 2020). In many ways this prevented at-risk populations from going to general hospitals and potentially picking up the virus. It would be safe to assume that optometrists working during this period also attended to a significant number of patients.

The majority (66.3%) of the respondents worked in private clinics. This means that the burden of the provision of safety items and personal protective equipment was borne by the optometrists and not by the government. Private optometric practices probably did not budget for the large amounts of PPE required during the pandemic.

Only 4.17% of responding optometrists reported carrying out all clinical procedures they were doing before the COVID pandemic. Social distancing measures which prevent coming in close contact may explain this shift in practice procedures. This demonstrates the enormous impact the pandemic has on conventional optometric practice. Research suggests that optometrists should hasten the development of electronic support to delivery of services by ECPs (Nagra et al., 2020).

Gloves, face masks, hand sanitisers and wash hand basins represented the most likely (63%) combination of infection control measures available optometric clinics. These closely tally with projections by ECPs of measures to be taken in the clinical setting when attending to patients. It has been shown that optometrists who plan on using face masks and hand washing/sanitisation are more likely to require their patients to do the same (Pult, 2020).

Online video classes (21.86%) and social media groups to interact with lecturers (24.59%) ranked highest in the suggestions made by students in this survey to help with academic activities while at home. Interestingly, studies in India report that 93.5% of sampled optometric educators have switched to e-learning

alternatives due to academic disruption caused by the COVID-19 pandemic (Rajhans et al., 2020). It remains to be seen how Nigerian optometric educators will adapt to this novel way of teaching.

One limitation of this study was that it was not designed to grade the knowledge of respondents. This would have enabled the authors to assess differences in the knowledge about COVID-19 among fully qualified optometrists compared to optometry students. Also, responding students were largely from the authors' home institution. More respondents from sister institutions would have ensured a better sample spread.

Even though the majority (57.4%) of the respondents recommended that the annual general meeting and scientific conference be shifted to a later date, at the time of preparation of this report, the association had decided to cancel the event in its entirety, siding with 26.7% of the respondents.

The COVID-19 pandemic continues to greatly impact on optometric practice and training in Nigeria. This is causing significant loss of income through closure of practices and reduction in patient numbers. Presently, there is no government support/incentive for healthcare workers in the Nigerian private sector. Optometrists who manage to keep their clinics and practices open have to provide PPE and disinfecting materials for themselves in spite of the financial challenges of these pandemic times. The Federal Government has a role to play in providing all health care workers with required supplies for protection of clinician and patient. This will reduce the burden on the public hospitals to care for patients and reduce exposure of patients to nosocomial viral infection.

Educators are encouraged to explore e-learning as a viable alternative to in-person lectures. It can be social distancing compliant and available at convenient times for all. Moreover, it expands the scope of learning as educators are at liberty to invite other experts to join online classes to share experience and demonstrate clinical instrumentation and skills that may not be readily available locally. To some the COVID-19 has showed that the world is indeed a small village; encouraging e-learning means education can now surpass geographical limitations. Again, the regulatory agencies have a role to play in ensuring that educators are trained in e-learning skills and required materials are provided.

The rapid increase in literature (Adhikari et al., 2020) on the COVID-19 pandemic is expected to give more understanding and help the world prepare better for a repeat occurrence of such a pandemic.

Conflicts of Interest

The authors declare no conflict of interest.

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Håndtering av tidlig COVID-19: Erfaringer fra nigeriansk optometri

Sammendrag

Denne studien ble designet for å kartlegge kunnskap, holdninger og praksis hos nigerianske optometrister og optometristudenter med hensyn til COVID-19 pandemien, og undersøke hvordan pandemien har påvirket deres personlige og profesjonelle daglige rutiner.

Google Forms ble brukt til å lage et webbasert strukturert spørreskjema. Dette ble sendt ut til nigerianske optometrister og optometristudenter. Spørreundersøkelsen ble foretatt mellom 10. april og 15. mai 2020. Svarene ble sendt elektronisk til artikkelforfatterne og ble registrert via Google programvare. Deskriptiv statistikk og inferens ble utledet fra innsamlet data.

Totalt 399 gyldige svar ble registrert. Av disse kom 183 (45.4%) fra optometristudenter ved de åtte optometriutdanningene i Nigeria, og de resterende var fra optometrister. Blant optometristene rapporterte 86% at det hadde forekommet tilfeller av COVID-19 i deres delstat. Ingen optometrister hadde selv hatt COVID-19, mens en (0.5%) student hadde blitt smittet med COVID-19. 12% av studentene som svarte syntes at undervisningen hadde vært tilfredsstillende nok til at den kunne fortsette der den slapp etter COVID-19 oppholdet, mens 21.5% av studentene synes hele studieåret burde starte på nytt fra starten.

COVID-19 pandemien har hatt stor påvirkning på optometriske tjenester og optometriutdanning i Nigeria. Utdanningsinstitusjoner må også endre metoder for å kunne sikre trygge og tilfredsstillende utdanningsforhold når undervisningen gjenopptas.

Nøkkelord: COVID-19, pandemi, optiker, optometri

Gestione all'inizio del COVID-19: l'esperienza dell'optometria nigeriana

Riassunto

Questo studio è stato disegnato per comprendere la conoscenza, attitudine e condotte degli optometristi nigeriani e studenti di optometria con rispetto alla pandemia COVID-19, al tempo stesso valutando l'impatto a livello giornaliero delle loro abitudini personali e professionali. Il pacchetto di Google Forms è stato utilizzato per disegnare un'inchiesta/questionario online. Tale questionario è stato inviato ad optometristi nigeriani e studenti di optometria assieme ad un messaggio per la richiesta della loro partecipazioni volontaria. Questa inchiesta è stat fatta tra il 10 Aprile e il 15 Maggio 2020. Le risposte ricevute sono state trasmesse elettronicamente agli autori e compilate con il pacchetto programmi di Google. Statistica descrittiva ed inferenziale sono state considerate per questi dati.

Un totale di 399 rispost valide sono state registrate durante lo studio. 183 (45.4%) delle risposte sono di studenti di optometria provenienti dagli otto dipartimenti di educazione in optometria della Nigeria. Un totale di 216 dottori in optometria hanno fatto parte delle risposte date. 86% degli optometristi che ha risposto ha riportato casi di COVID-19 nel loro stato. Nessun optometrista ha contratto la malattia del COVID-19 mentre uno solo (0.5%) degli studenti è stato infettato dal COVID-19. Il 12% degli studenti ha risposto di sentirsi che gli ambienti educativi erano adeguati per far fronte al ritorno post COVID-19, mentre il 21.5% degli studenti ha risposto che le lezioni dell'università dovevano essere riprese. La pandemia del COVID-19 ha avuto un enorme impatto sull'erogazione dei servizi tra gli optometristi nigeriani e l'educazione optometrica. Istituzioni educative devono anche adattarsi alle correnti realtà per essere in grado di fornire una formazione sicura ed adeguata quando le lezioni dell'università riprenderanno o rinizieranno.

Parole chiave: COVID-19, pandemia, optometristi, optometria