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Awareness, Knowledge and Perception of the Career Prospects in Optometry Among Optometry Students in Nigeria

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Abstract

Optometry practice is an essential aspect of health care system, that examine, diagnose, treat and manage diseases and disorders of the visual system and related systemic conditions. It requires specialty training to provide quality healthcare for people with visual disorders. This study assessed the level of awareness, knowledge and perception of the Career prospects among optometry students in Nigeria. A total of 437 respondents participated in this study comprising of 254 (58.1%) females and 183 (41.9%) males and their mean age was 23.4±2.2. Two hundred and forty-seven (247) representing (56.52%) of the study population, had good level of awareness and 330 (75.51%) had good level of knowledge of the career prospects in optometry. In conclusion, there is a low level of good awareness and high level of good knowledge of the career prospects in optometry among optometry students in Nigeria.

Keywords: Awareness, Knowledge, Perception, Optometry, Students, Nigeria

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INTRODUCTION

The World Council of Optometry (2022) defines optometry as a healthcare profession that is autonomous, educated, and regulated (licensed/registered), and the Optometrists are primary healthcare practitioners of the eye and visual system that provides comprehensive eye and vision care, that includes: refraction and dispensing, detection/diagnosis and management of disease in the eye, and the rehabilitation of conditions of the visual system

Optometrists are recognized as physicians under the Medicare program in the United States. They examine, diagnose and manage diseases and disorders of the eye and the visual system. They also play a major role in an individual's overall health and well-being by detecting systemic diseases, and diagnosing, treating and managing ocular manifestations of those diseases. They achieve these through the prescription of medications, low vision rehabilitation, vision therapy, prescription of spectacle lenses, contact lenses and performing certain surgical procedures (in some countries that have legislation that permits this). They also help in counselling patients regarding surgical and non-surgical options that meet their visual needs specifically related to their occupations, avocations and lifestyles (America Optometric Association, 2022). Careers in Optometry could be practice-oriented (with or without further interest in the areas in Optometry) or non-practice oriented (academia, research and industrial Optometry). However, others in pursuit of passion, avocation and interest may enter into entirely different fields such as humanities, medicine, business administration and law. Factors such as career opportunities, length of residency and work-life balance have been reported to have a significant impact on medical students' choice of career (Lefevre et al., 2010; Kiolbassa et al., 2011).

The career aspirations of optometry students in Nigeria, though personal, have consequential effect on the country's eye services delivery and the future of Optometric education and its practice in the country. These choices could affect the distribution of the human resource capital available for healthcare delivery within the country (Giang et al., 2015) and Nigeria presently faces a serious challenge of shortage of health workers within its health sector (Aluko et al., 2019). The awareness, knowledge and perception about these career prospects are the bedrock of the career decision making process. Being aware of the possibilities enables the students take necessary steps in time in ensuring that they are able to strategically position themselves in other to

adequately maximize time and other resources currently at their disposal while in training to achieve their dreams.

MATERIALS AND METHODS

Study Population

This study was a descriptive cross-sectional study conducted across 7 schools of Optometry namely; the University of Benin in Edo State, Abia State University in Abia State, Bayero University in Kano State, Imo State University in Imo State, Madonna University in Anambra state, the University of Ilorin in Kwara state and the Federal University of Technology in Imo state currently accredited to offer optometry undergraduate program. The study population consisted of five-hundred (500) optometry students in Nigeria in clinical classes that met the inclusion criteria. A systematic sampling technique was used to ensure proportionate allocation to each of the selected school. The study was carried out within a period of 3 months (November 2023 to January 2024).

Study Materials

The main tool for this study was a well-structured questionnaire which was converted to Google Forms to allow for ease of reach to the target population.

Inclusion Criteria

Optometry students currently studying in Nigeria, Students in their 400, 500 or 600L in the study location, Students who gave consent and were willing to participate in the study.

Exclusion Criteria

Students who did not give their consent to participate in the study, Students who were unable to fill out the Google forms online, Students who had already written their final exams at the time of carrying out this study.

Ethical Consideration

Ethical clearance was obtained from the ethical committee of the Department of Optometry, University of Benin. Informed, written consent was obtained from the student after a detailed explanation in the Google form about the study according to the tenets of Helsinki. Only consenting students were used in this study.

Research Procedure

The questionnaire contained a detailed explanation of the purpose of the procedure in Google form format which was administered to get the relevant data. The questionnaire consisted of three (3) sections:

Section A contained questions on the socio-demographic characteristics of the study population. This included as age, gender, state of origin, training institution.

Section B consisted of questions to determine the level of awareness of these students about the career prospects in Optometry.

Section C consisted of questions to determine the level of knowledge about the career prospects in Optometry.

Section D consisted of questions to determine the perception about the career prospects in Optometry. The recorded responses were then retrieved from the Google Cloud and were properly documented for analysis.

Data Analysis

All data from the field were retrieved, sorted appropriately into those containing information from the different schools, screened for completeness, collated, coded and analysed using the electronic statistical package IBM SPSS version 26.0 and quantitative variables was expressed as frequencies, percentages, mean and standard deviation. The results obtained was then analysed and presented in the form of frequency, tables and bar charts. Univariate analysis was done to assess the distribution of variables. The bivariate analysis was done to determine the association between the socio-demographic characteristics of respondents and the level of awareness and knowledge of the career prospects in Optometry. These tests of association for categorical variables were done using the Chi-square test or Fisher's exact test (where the expected frequency was less than 5 in more than 20% of the cells) and binary logistic regression will be performed to assess the impact of the demographic factors on the likelihood that students would pursue either a career in clinical optometry or non-clinical optometry. A p-value <0.05 will be considered statistically significant.

Level of Awareness

A scoring system was used to assess the level of awareness of the respondents with a total of 5 questions (including Multiple response questions) with the right responses given a score of "1" and the wrong responses given a score of "0". The maximum score was "22".

The cumulative scores were then obtained from the answers and converted to percentages. Respondents who scored ≥50% were considered to have a "good level of awareness" while respondents who scored <50% were considered to have a "poor level of awareness".
A high level of awareness was declared when ≥70% of the respondents had a "good level of awareness" and a low level of awareness declared when <70% of the respondents had a "poor level of awareness".

Level of Knowledge

A scoring system was used to assess the level of knowledge of the respondents with a total of 10 questions (including Multiple response questions) with the right responses given a score of "1" and the wrong responses given a score of "0". The maximum score was "10". The cumulative scores were then obtained from the answers and converted to percentages. Respondents who scored ≥50% were considered to have a "good level of knowledge" while respondents who scored <50% were considered to have a "poor level of knowledge".
A high level of knowledge was declared when ≥70% of the respondents had a "good level of knowledge" and a low level of knowledge declared when <70% of the respondents had a "poor level of knowledge".

Level of Perception

A scoring system was used to assess the level of perception of the respondents with a total of 5 questions (including Multiple response questions) with the right responses given a score of "1" and the wrong responses given a score of "0". The maximum score was "5". The cumulative scores were then obtained from the answers and converted to percentages. Respondents who scored ≥50% were considered to have a "good perception" while respondents who scored <50% were considered to have a "poor perception".
A high level of good perception was declared when ≥70% of the respondents had a "good perception" and a low level of knowledge declared when <70% of the respondents had a "poor perception".

Limitation of Study

This study was carried out using Google Forms in order to ensure a wider reach of the target audience. Some respondents who fell within the inclusion criteria were not online at the time of carrying out the study to get their responses.

RESULTS

Table.1; SECTION A: Socio-demographic characteristics of respondents

VARIABLE	FREQUENCY (n=437)	PERCENT (%)
Gender		
Female	254	58.1
Male	183	41.9
Age group (years)		
< 24	237	54.2
≥ 24	200	45.8
Mean (SD) 23.4 (2.2)		
Institution of training		
University of Benin	108	24.7
Imo State University	75	17.2
Abia State University	69	15.8
University of Ilorin	67	15.3
Bayero University Kano	44	10.1
Federal University of Technology Owerri	40	9.2
Madonna University	34	7.8
Study level		
400	105	24.0
500	169	38.7
600	163	37.3

The above table shows the socio demographic characteristics of the respondents. There were more female respondents than male respondents. 24.7% of the respondents were being trained in the various universities.

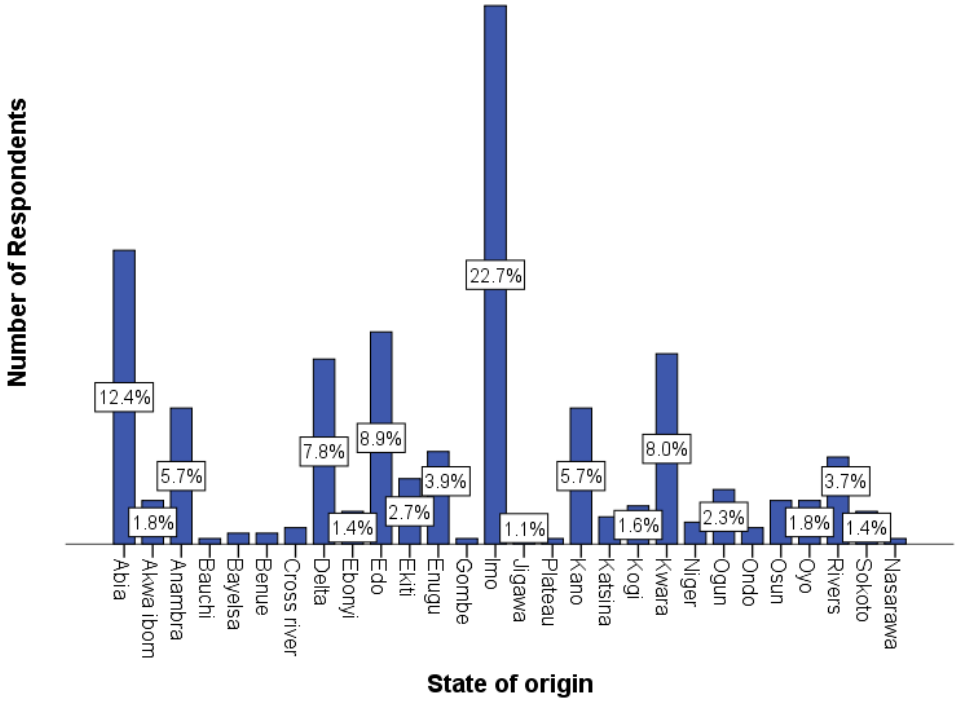


Figure 1: showed that Imo state university student participated more in the research study while Bauchi students were the least.

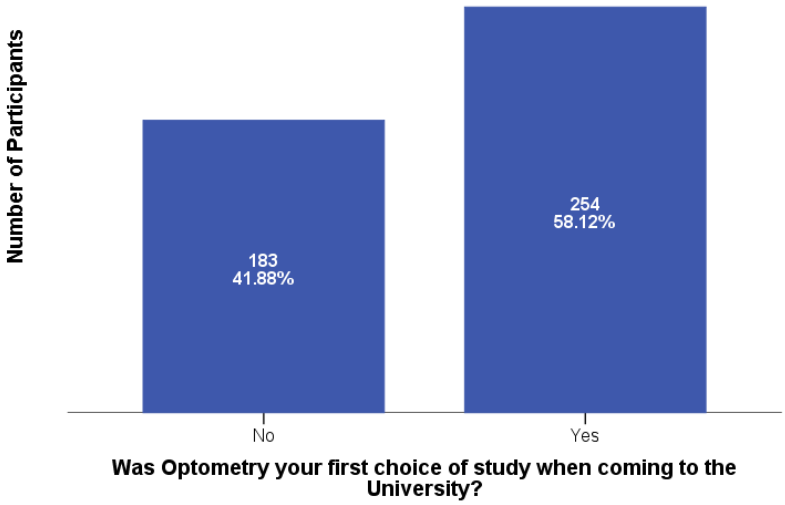


Figure 2: The result showed that 58.12% had preference for optometry as a study course upon applying for admission into the university while 41.88% did not choose optometry as a preference.

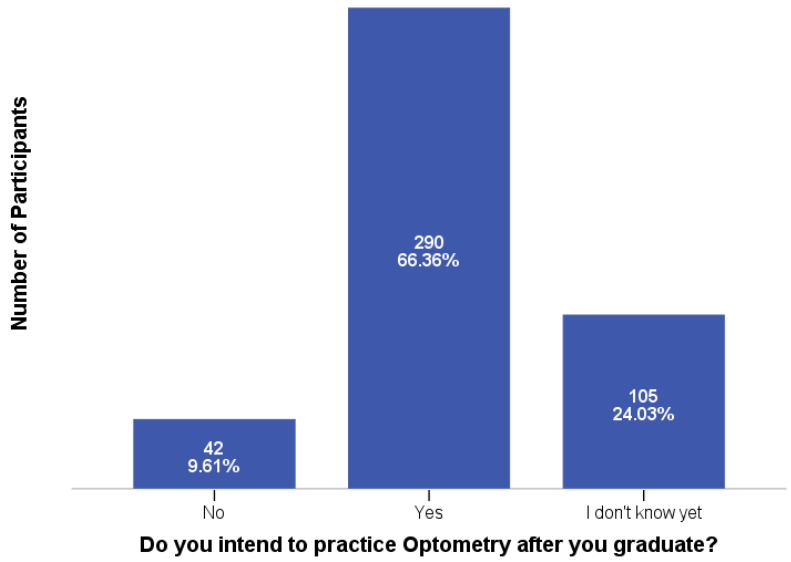


Figure 3: The result showed that 66.35% of respondents intends to practiced optometry after graduation followed by those who do not know by 24.03% and the least (9.615) said no

Table 2: Frequency distribution of the Assessment of the Level of Awareness.

QUESTIONS	Right responses n(%)	Wrong response n(%)
Which of the following is/are areas c specialty in Optometry? **	2892 (661.7)	1478 (338.3)
Have you heard of the Optometry fellowship program?	316 (72.3)	121 (27.7)
An Optometrist can engage in which of these? Clinical/non-clinical practice **	633 (144.9)	241 (55.1)
An Optometrist can be a researcher	397 (90.8)	40 (9.2)
An Optometrist can work in which c the following? **	2557 (485.3)	939 (214.7)

**=multiple response question. The above table shows the distribution of responses on the various questions used in assessing for the level of awareness among respondents.

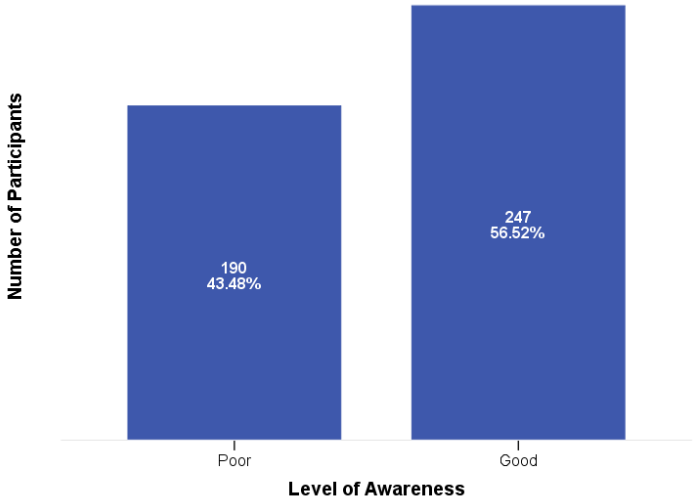


Figure 4; the result showed that the respondents had a high level of awareness (56.52%), while 43.48% of the respondents had poor level of awareness

Table 3: Socio- Demographic characteristics of the Level of Awareness of the Respondents in study population

VARIABLE	Level of Awareness		Test statistic	*p*-value
	Good (N=247	Poor (N=190		
	n (%)	n (%)		
Gender			**χ2**	**0.043***
Female	138 (55.9)	116 (61.1)	1.185	
Male	109 (44.1)	74 (38.9)		
Age group (years)			**χ2**	**<0.001***
< 24	114 (46.2)	123 (64.7)	14.941	
≥ 24	133 (53.8)	67 (35.3)		
Institution of training			**χ2**	**0.018***
University of Benin	69 (27.9)	39 (20.5)	51.329	
Imo State University	44 (17.8)	31 (16.3)		
Abia State University	41 (16.6)	28 (14.7)		
University of Illorin	53 (21.5)	14 (7.4)		
Bayero University Kano	8 (3.2)	36 (18.9)		
Federal University of Technology Owerri	21 (8.5)	19 (10.0)		

Madonna University	11 (4.5)	23 (12.1)		
Study level			**$\chi 2$**	**<0.001***
400	30 (12.1)	75 (39.5)	48.325	
500	101 (40.9)	68 (35.8)		
600	116 (47.0)	47 (24.7)		

*=statistically significant

Table 3; The result above showed that more females (55.9%) than males (44.1%) had better level of awareness, with the ages between 24years and above. Students of the university of Benin showed highest level of awareness while, Bayero University had the least level of awareness. Also, students in the final year (600L) participated more and the least participants were in the 400l. The association between gender, age group, training institution and study level and the level of awareness were all statistically significant as $p<0.05$.

Table 4: Frequency distribution on the Assessment of the Level of Knowledge in the study population.

QUESTIONS	**Right response n(%)**	**Wrong response n(%)**
Which of the following is an aspect of optometry that deals with care for old people's vision?	381 (87.2%)	56 (12.8)
	366 (83.8)	71 (16.2)
Which of the following is an aspect of optometry that deals with care vision in sports?		
Which of the following is an aspect of optometry that deals with specialised care according to occupation?	397 (90.8)	16 (3.7)
An Optometrist can practice in the clinic and still be a researcher.	403 (92.2)	34 (7.8)
An Optometrist can practice in the clinic and still be an administrator in a public ic Agency.	353 (80.8)	84 (19.3)
An Optometrist can work with tech companies such as Google, Microsoft etc.	317 (72.5)	120 (27.5)
An Optometrist can become a lecturer without a master's degree.	260 (59.5)	177 (40.5)
Which of the following is a program which allows you to receive highly specialised training following residency training?	175 (40.0)	262 (60.0)
Only a lecturing Optometrist can become a professor (PhD).	157 (35.9)	280 (64)
An Optometrist can only have a master's program in Optometry	273 (62.5)	164 (37.5)

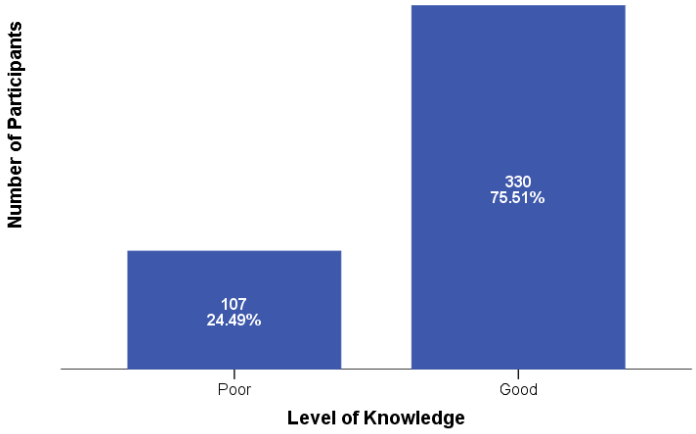
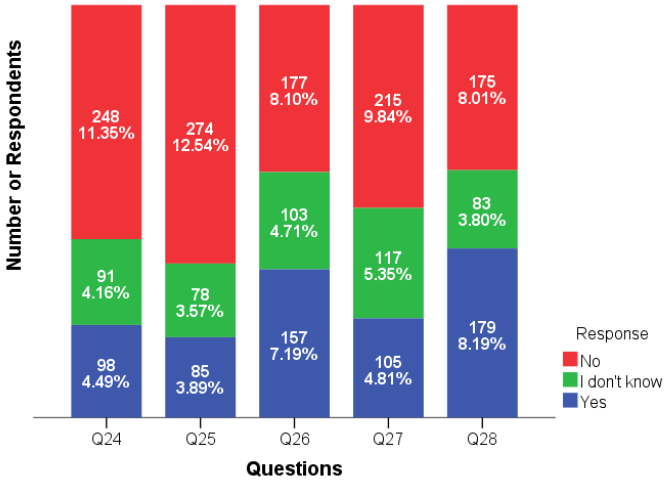


Figure 5: The above showed that 75.51% of the respondents had good knowledge while 24.49% had poor knowledge of the assessment



Q24= There are not a lot of career opportunities for Optometrists.

Q25= An Optometrist cannot work in a multidisciplinary Hospital.

Q26= It is better for an Optometrist to work in a clinic than elsewhere.

Q27= A career in Optometry will be boring due to its monotony.

Q28= A career in Optometry will not give me the kind of life and money I want.

TABLE 6: WAYS RESPONDENTS INTEND TO PRACTICE AFTER GRADUATING

Ways	Frequency n (%)
I will work in a private clinic/hospital as a doctor	77 (17.6)
I will work in a government hospital as a doctor	6 (1.4)
I will be a Researcher	5 (1.1)
I will be an entrepreneur	4 (0.9)
I will work in a government agency while having my private practise	10 (2.3)
I will practice in a group/partnership practise.	4 (0.9)
I will work in the military	1 (0.2)
I will be a Lecturer	5 (1.1)
I will work in the clinic while still being a researcher	5 (1.1)
I will work in a community health centre	4 (0.9)
I hope to be retained in my PPA after my NYSC.	9 (2.1)

In the above table, majority of the respondents (17.6%) wanted to work in a private clinic or hospital as a clinician, 2.1% expressed desire to be retained in their Place of Primary Assignment following the conclusion of their service year.

DISCUSSION

This study sets out to assess the level of awareness and knowledge of career prospects in optometry among optometry students in Nigeria. Several studies (Abhilasha and Kulkami, 2020; Faucher, 2011, kobia-Acquah et al., 2020, Loughman et al., 2015, Moradi et al., 2017, Oduntan et al., 2007) have assessed the level of knowledge, awareness and challenges faced by Optometry students in training in universities across different parts of the world, on career choices ahead of graduation. Although these studies assessed optometry students, none however, focused on Nigerian Optometry students. This study focused on Nigerian Optometry students, assessing their level of awareness and knowledge of career prospects in the profession.

There was a low level of good awareness (56.62%) on career prospects in Optometry among students across the various schools of Optometry in Nigeria reported in this study. Although there was an overall low level of good awareness, female optometry students had higher level of good awareness than their male counterpart which was consistent with the

report in the study by Kobia-Acquah et al. (2020) that gender was a significant predictor of choice of optometry practice. Respondents who were ≥ 24 years old also had higher level of good awareness (53.8%), this could be largely attributed to the progressive increase of age as the study level increases. Students in lower study levels are younger than those in higher study level. The high level of good awareness in the higher age group also correlates with the study level which reports the highest level of good awareness among 600 level (47.0%) students and the least among 400 level students (12.1%). This high level of good awareness with increasing age and study level could be because the level of experience of these students and their exposure to more aspects of optometry, increases as they go from lower levels of study to higher levels. The study curriculum could play a role in this influence as certain courses taught in the higher levels provides more information on the scope of practice in the profession, for instance in the University of Benin, 500 level optometry students have to undergo period of supervised externship programme this could provide these students with more information regarding the various areas of specialty in the profession providing them with the necessary exposure they would require on awareness on the different career prospects in the practice. The association between gender, age group, institution of training and study level, and the level of awareness were all statistically significant ($p < 0.05$). Therefore, the hypothesis that there is no statistically significant difference in the association between gender, age group, institution of training and study level, and the level of awareness were rejected.

The was a high level (75.51%) of good knowledge on the career prospects in Optometry among the students across different school of optometry in Nigeria. Although more female (58.5%) optometry students had good level of knowledge than males (41.5%), the association between gender and the level of knowledge was however not statistically significant ($p = 0.086$) (Table 5). Therefore, the null hypothesis that there is no association between gender and level of knowledge was accepted ($p > 0.05$). More Optometry students who were < 24 years old had higher level of knowledge (50.3%) than their counterpart, although the difference between both categories were relatively small, there was a statistically significant difference in the association between the age group and level of knowledge ($p = 0.001$). The prevalent level of knowledge among the age group and the study level did not follow the same pattern of increase observed in the level of awareness. This difference could be attributed to the uneven distribution of the mean age of the respondents in the different study levels across different study institutions, as the mean age

was higher in some institution than in others. Students in 600 level had the highest level of good knowledge (43.9%) similar to what was earlier observed in the level of awareness. Again, this similarity could be attributed to the study curriculum of the schools of Optometry as certain courses taught in the higher levels gives more detailed information on the different aspects of the profession, for instance in the University of Benin, 600 level optometry students have to take specialty clinics as. This provides these students the opportunity to learn more information on the different areas of specialty in the profession. These findings were also similar with the study by Kobia-Acquah *et al.* (2020) which also identified the institution of training, age and study level to be major determinants on the knowledge on the choice of practice among optometry students. There was a statistically significance in the association between age, institution of training and study level, and the level of knowledge of the career prospects in Optometry ($p = 0.001$, $p = 0.013$ and $p = <0.001$ respectively) (Table 5). Therefore, the null hypothesis that there is no statistically significant difference in the association between age, institution of training and study level, and level of knowledge is rejected ($p < 0.05$).

98 (4.49%) respondents believed that there were not a lot of career opportunities for Optometrists. The recent brain drains within the health sector in Nigeria (Egbejule, 2023) may provide better understanding on why respondents may have reacted in this way. Factors such as political instability, low salaries and wages were some positive determinants which have been observed to affect brain drain in Nigeria (Ajayi et al., 2022). 179 (8.19%) agreed that a career in Optometry in Nigeria would not give them the kind of life and money they want. Although this type of perception of optometry as a future practice would greatly affect the choice of a career path in the profession most respondents however still indicated a positive intention to practice optometry (66.36%) upon graduation. While 157 respondents agreed that it was better for an Optometrist to work in a clinic than elsewhere, 105 believed that a career in Optometry would be boring due to monotony. This perception could be attributed to the low level of awareness on the scope of practice in the profession, as Optometrist are generally perceived to be glass cutters. Most respondents 77(17.6), who showed an interest in practicing, desired to work in a private clinic/hospital as a doctor, while only 5(1.1%) wished to practice as a researcher. This low distribution of future career choices evidently supports the low level of good awareness on the career prospects in Optometry among the respondents.

In carrying out this study, data collection was limited by the difference in the academic calendar being observed by the different optometry schools across the country. Some respondents found it difficult to identify with a particular level while answering the questionnaire. Although this was resolved by helping to provide clarity by determining the academic year still being observed by the institution in which they were being trained. Future studies may consider analysing the responses from each training institution separately with the aim of determining which institution had students with the highest/least level of awareness or knowledge of the career prospects in Optometry. It could also focus on determining the factors affecting the level of awareness and knowledge of the career prospects in Optometry among Optometry students in Nigeria.

CONCLUSION

There is a low level of awareness (56.52%) of the career prospects in Optometry among Optometry students in Nigeria. There was a statistically significant difference in the association between gender (p = 0.043), Age (p = <0.001), institution of training (p = 0.018) and study level (p = <0.001), and the level of awareness of the career prospects in Optometry among Optometry students in Nigeria. There is a high level of knowledge (75.51) of the career prospects in Optometry among Optometry students in Nigeria.There was a statistically significant difference in the association between, Age (p = 0.086), institution of training (p = 0.001) and study level (p = < 0.001), and the level of knowledge of the career prospects in Optometry among Optometry students in Nigeria.

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