

# Assessing the Knowledge of Primary Care Physicians on the Guidelines for Referral to Optometrist and Ophthalmologist in Calabar, Nigeria

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## Abstract

**Background:** A functional referral system is the building block for an effective and efficient healthcare. The use of standard operational guideline is a tool for proper referral system based on global best practice. In our clime, there seem to be a lack awareness and understanding of the job role of the ophthalmologist and optometrist among healthcare professionals; hence leading to an improper management of patients with eye complaint. The use of operational guidelines for referral of patient with visual complaint by primary care physician is a very important tool that will ensure comprehensive eye care that will give good outcome.

**Aim:** To evaluate the knowledge of the primary care physicians on the job specification of the ophthalmologist and optometrist; and the use of referral guidelines for referral of patients with visual impairment to these eye care providers.

**Method:** This was a cross sectional descriptive study. A questionnaire was administered using the respondent-administered method. Simple random was used to recruit participants into the study. All respondent gave a written informed consent.

**Results:** A total of 152 respondents participated in this study. The mean age of respondents was 39.22 ± 4.19 years. Over 122 (80%) primary care physicians had satisfactory knowledge about the job specification of the ophthalmologist and optometrist. Eighty-four (55.26%) respondents referred their patients with ocular complaints to the optometrist. One hundred and forty-five (95.39%) did not have a referral guideline for the referral of patients with eye complaints.

**Conclusion:** Although there was a good knowledge about the job specification of the ophthalmologist and optometrist amongst the primary care physicians; however, majority referred their patients with ocular complaints to the optometrist which is against global best standard. There is need to have a standardized ophthalmology referral guideline for the primary care physicians to ensure good management outcome of patients with visual complaints.

## Background

An effective and efficient referral system plays an important role in prompt access to healthcare service delivery with resultant good prognostic outcome of the patients' eye condition and satisfaction because it would prevent unnecessary delay and waste of time of the patient and the eye care service provider [1]. Such a functional referral system is the building block for prompt access to services at affordable rate based on comprehensive and continuity of care [2]. One of the several challenges of referral system is the understanding of what the receiving healthcare professional can offer to the patient referred based on the available resources such as knowledge, skills, equipment and services [3]. In order to prevent error in referral and to ensure a functional referral system in eye care services, the use of standard operational guidelines and updated referral tools based on global best practice are used in most developed countries [1,3]. In environments where there are no operational guidelines on referrals it becomes pertinent that the various care providers ensure a fair knowledge of the job specifications of other healthcare professionals within their sphere for effective and efficient referral of the patients.

In Nigeria it has been reported that there is knowledge gap in understanding the difference between the job specification of the ophthalmologist and optometrist in the health sector, [4] and some

people in other countries think there is overlap between in the job role of these two professionals [5]. Such knowledge deficiency may affect effective and efficient referral of patient.

Based on global best practice, there is clear difference between the ophthalmologist and optometrist based on training, knowledge, skills and job specification in the health sector. Globally, there are three most common eye care professionals these are the: ophthalmologist, optometrist and optician. The ophthalmologist is a medical professional while the optometrist and optician are allied healthcare professionals. The optometrist with qualification as doctor of optometry is not equivalent to an ophthalmologist [6]. Based on knowledge and skills, the ophthalmologist is trained to provide full range of eye care which includes all medical eye diseases, surgical eye conditions and optical changes. The optometrist is trained to provide vision care ranging from examination/ testing of the eyes, prescribing and dispensing lenses for correction of visual impairment. Optician is a professional

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Received: June 10, 2022; Accepted: June 24, 2022; Published: June 27, 2022

who makes, verifies, delivers and fits lenses, frames and other specially fabricated optical devices and/or contact lenses upon prescription by the ophthalmologist, to the intended wearer [7]. The ophthalmologist work mainly in the secondary and tertiary health institution while few optometrists and opticians work there as part of the eye care team.

In some countries, little modifications are made to the global best practice based on the eye care need or challenge of the country. In United States of America, optometrists are trained and licensed to treat minor eye diseases [7]. In United Kingdom, there are both hospital-based and community-based optometrists that complement the work of the ophthalmologists by screening for vision impairment and referring appropriately for further evaluation by the ophthalmologist [8]. In Nigeria, the cap 09 laws of the optometrists and dispensing opticians Act 2004, the optometrist is an allied healthcare professional trained in the art and science of vision care. "Their scope of practice includes eye examination to determine refractive errors and correction of refractive errors using spectacles, contact lenses, low vision aids; diagnosis and management of minor ocular infections which do not pose a threat to the integrity of the ocular system" [9].

In some settings the optometrist may work as a primary eye care provider where he has first contact with the patient with eye conditions that may not necessarily be visual impairment. The optometrist is expected to listen to the client and make prompt referral to the ophthalmologist for a more comprehensive care. In tertiary health facilities, the eye care is a team comprising of ophthalmologist, optometrist, ophthalmic nurses and opticians. The ophthalmologist is meant to lead the team, coordinate the management of patient, including refraction (which is a part of eye examination of patient with eye complaints) thereafter; the lenses are prescribed by the ophthalmologist after excluding other medical conditions that may affect vision [10].

The major source of referral to the eye care professionals is the primary care physicians both from the secondary and tertiary health facilities. The knowledge of job specification of various eye care professionals and referral guidelines by first contact physician will influence effective and efficient referral of the patient to the various eye care professionals.

This study aimed to assess the knowledge of primary care physicians on the global best practice guidelines for referral to optometrist and ophthalmologist in Calabar, Nigeria; in order to eliminate secondary delay in the care of patient with visual loss who present to their practice.

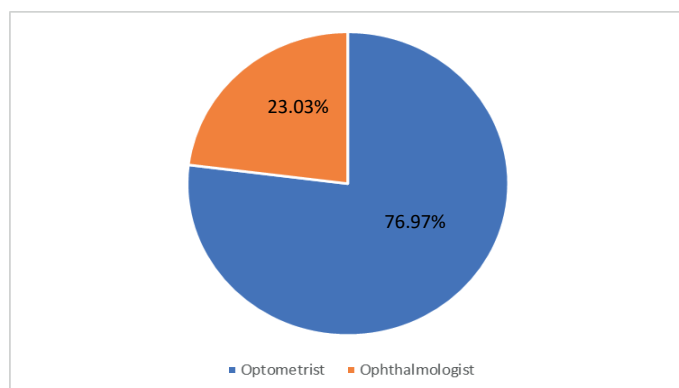


Figure 1. Eye health provider primary care physicians often refer eye patients to the optometrist

Table 1. Socio-Demographic of Respondents

	Frequency (152)	Percentage (100%)
<b>Gender</b>		
Male	105	69.08
Female	47	30.92
<b>Age</b>		
<40	83	54.6
≥40	69	45.4
<b>Rank/Specialization</b>		
General practitioner	42	27.54
Medical officer	79	52.93
Registrar	11	7.28
Senior registrar	13	8.61
Consultant	7	4.64
<b>Place of practice</b>		
Government hospital	53	34.87
Private hospital	65	42.76
Mission hospital	19	12.50
Govt. and private	15	9.87

## Materials and Methods

The study was conducted in Calabar which is the capital city of Cross River State in the South-South geo-political Zone of Nigeria, from April to July 2021. The city has two tertiary health facilities, a general hospital, Navy Reference Hospital, and about thirty private clinics; where about two hundred and fifty (250) primary care physicians practice. The study population were primary care Physicians that were made up of consultant family physicians, specialist family physicians and medical officers.

The research was a cross sectional observational and descriptive study that used respondent-administered questionnaire. Quota simple random was used to recruit a total of 152 participants after sample size calculation based on the Leslie Kish formula. Non-primary care physicians were excluded from the study. Data collected was analysed using Scientific Package for Social Sciences (SPSS) version 21.0.

## Result

A total of 152 respondents participated in this study. The mean age of respondents was 39.22 ± 4.19 years with age range between 28-51 years. One hundred and fifty (98.68%) of respondents saw patients with eye complaints (Table 1).

It was observed that difficulty reading tiny prints was the most common eye complaints seen by 102 (67.11%) respondents. Majority of the primary care physicians 84 (55.26%) referred their patients with ocular complaints to the optometrist. The mode of referral was mainly verbal 80 (52.63%) (Table 2 and Figure 1).

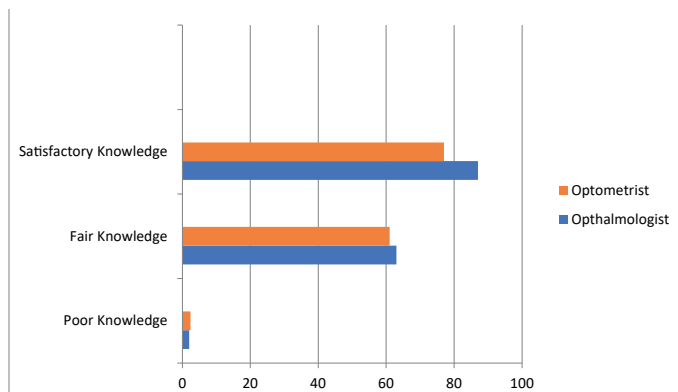
Most of the respondents (80%) had satisfactory knowledge about the job specification of the ophthalmologist and optometrist (Figure 2).

Majority, 145 (95.39%), did not have a referral guideline for the referral of patients with eye complaints. Of the 7 respondents who used a referral guideline; 2 used the World Health Organisation guideline (WHO), while one used either the National Health Insurance Scheme (NHIS) referral form, National Health Service (NHS), WHO or NHS referral guideline for ophthalmologist, training as family medicine residents respectively.

A total of 141(97.24%) out of 145 who had no referral guideline showed willingness to utilise guideline, if available (Figure 3).

**Table 2.** Clinical Records of Respondents

Do you see patients with eye complaints?	Frequency (152)	Percentage (100%)
Yes	150	98.68
No	2	1.32
How many patients with eye complaints do you see in a month?	Frequency (152)	Percentage (100%)
0-10	60	39.47
11-20	64	42.11
21-30	19	12.50
31-40	9	5.92
Common eye complaints	Frequency (152)	Percentage (100%)
Difficulty reading tiny prints	102	67.11
Difficulty reading tiny print, seeing far objects	1	0.66
Difficulty reading tiny print, seeing far objects, red eyes, itching	1	0.66
Difficulty reading tiny print, seeing far objects, red eyes, itching, watery eyes	2	1.32
Difficulty reading tiny print, seeing far objects, itching	1	0.66
Difficulty reading tiny print, seeing far objects, itching, watery eyes	1	0.66
Difficulty seeing far object	11	7.24
Red Eyes	26	17.11
Red eyes, itching, watery eyes	1	0.66
Itching	5	3.29
Watering eyes	1	0.66
Mode of referral	Frequency (152)	Percentage (100%)
Written	72	47.37
Verbal	80	52.63



**Figure 2.** Knowledge of Job Specification of the various eye care professionals

The gender, age, years of practice, rank or specialisation and place of practice of the respondents did not statistically affect the knowledge of the job role of the eye care professionals studied (Table 3).

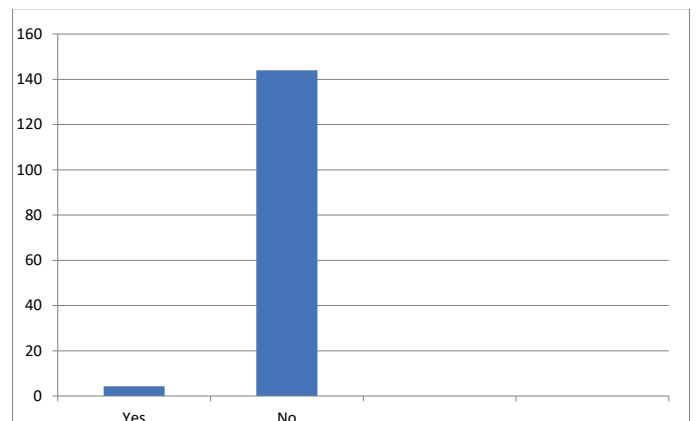
**Discussion**

Primary care physicians (PCPs) play a key role in the prevention and management of eye disorders [11]. A relatively young population formed the bulk of respondent in this study. In addition, in similar studies the age group was of the young population [12,13].

In this study, majority of study participants 150 (98.68%) reported that they saw patients with eye complaints in their clinics. This was in keeping with reports that eye-related complaints made up 2-3% of primary care office visits [14]. It is therefore important that primary care physicians have the requisite knowledge for basic management

and make appropriate referral, when necessary. The most common eye complaints that presented to study participants was difficulty reading tiny prints 102 (67.11%). A study in Enugu reported refractive error as the most common referred cases from primary care physicians [15]. This was in contrast to studies where conjunctivitis being one of the commonest in a study by Cronau H, *et al.* [16,17]. The difference maybe be due to location or year of study, also it may be due to definition of terms used in the study.

Referral of patients with eye complaints was high and up to 84 (55.26%) referred to optometrists. This was similar to those reported in other studies [11,15]. The referral to optometrists in this study may have been related to the high number presenting with difficulty reading tiny prints which is erroneously assumed to be refractive errors needing reading glasses only. Although refractive errors can be easily corrected with spectacles it is to be noted that there are potentially blinding diseases that can present with difficulty in reading tiny prints which may need other forms of treatment that will be beyond the scope of practice of an optometrist. Detailed history and basic examination will be helpful to the PCP in making this distinction which underscores the importance of a primary care physician being knowledgeable in eye care. This will enable the PCP to recognise when an eye complaint may



**Figure 3.** Use of Referral Guideline

**Table 3.** Factors affecting the knowledge of job specification of the various eye care professionals

Variable	Knowledge of Job Specification			Chi square	p-value
	Poor	Fair	Satisfactory		
<b>Gender</b>					
Male	10 (9.5%)	41 (39.1%)	54 (51.4%)	2.319	0.314
Female	5 (10.6%)	24 (51.1%)	18 (38.3%)		
<b>Age (years)</b>					
<40	9 (10.8%)	30 (36.1%)	44 (53.0)	3.279	0.194
≥40	6 (8.7%)	35 (50.7%)	28 (40.6)		
<b>Years of Practice</b>					
1-12	13 (42.3%)	58 (9.5%)	66 (48.2%)	0.453	0.798
13-24	2 (46.7%)	7 (13.3%)	6 (40.0%)		
<b>Rank/Specialization</b>					
General Practitioner	5 (12.2%)	15 (36.6%)	21(51.2%)	8.359	0.399
Medical Officer	10 (12.7%)	32 (40.5%)	37 (46.8%)		
Registrar	0 (0.0%)	7 (63.6%)	4 (36.4%)		
Senior Registrar	0 (0.0%)	5 (38.5%)	8 (61.5%)		
Consultant	0 (0.0%)	5 (71.4%)	2 (28.6%)		
<b>Place of Practice</b>					
Government	4 (7.5%)	26 (49.1%)	23(43.3%)	5.661	0.462
Private	8 (12.3%)	26 (40.0%)	31 (47.7%)		
Mission	3 (15.8%)	5 (26.3%)	11 (57.9%)		
Government & Private	0 (0.0%)	8 (53.3%)	7 (46.7%)		

not be spectacle related but could lead to visual loss that would require urgent referral to an ophthalmologist [13].

The mode of referral was mainly verbal 80 (52.63%) which does not provide any medical information to the eye care professional that the patient was being referred to. This method of referral should be discouraged as written referrals have been reported in other studies [12,15,18]. Oftentimes, referrals for eye care seem to be driven by acute, symptomatic problems and to a lesser extent by a known ocular condition which was reflected in this study. The importance of routine eye care was not observed in the referral patterns in this study as had been reported in a study done by Ettinger [19]. Deficiencies in a referral system as observed in this study can be a cause of many patients not receiving prompt and appropriate eye care [20]. In addition, referral to eye care is a key aspect of health care that is a potential quality-of-care concern identified by the Institute of Medicine and it has great benefits of preventing blindness due to secondary delay, [21] also the lack of effective and functional referral system places a huge demand on secondary and tertiary levels of care for health care service provision [22].

More than 95% of respondent did not have any written referral guideline for the referral of patients with eye complaints. Notably over 141(97.24%) expressed willingness to use a referral guideline if provided. A few used WHO and NHIS referral forms for referral to eye care practice. Use of referral guideline is standard practice in developed countries but this seems to be lacking in Nigeria.

Most (Over 80%) of the respondents were satisfactorily knowledgeable about the job specification of the ophthalmologist and optometrist. This is a positive development as such knowledge is employed in knowing who to make referrals to for better outcome of the patient. This knowledge was not translated to proper use as majority of patients who presented to them with visual impairment were referred to optometrists. In our system where the primary care physicians who also offer some form of first contact eye care service, should move the patient to the next level of care where they will likely have the services of an ophthalmologist and optometrists working together for a more holistic care. Referring to optometrist service only may often delay other diagnosis as their scope of practice is limited as stated by the Act of law in Nigeria and their job specification as defined by global best practice. In this study, gender, age, years of practice, rank or specialisation and place of practice of the respondents did not statistically affect the knowledge of the job role of the eye care professionals studied.

## Conclusion

Although there was a good knowledge about the job specification of the ophthalmologist and optometrist amongst the primary care physicians; however, majority referred their patients with ocular complaints to the optometrist which is not in line with global best standard in referral of patient with eye complaints. The primary care provider's ability to obtain a good history, examine, appropriately diagnose, promptly treat, and/or refer of ocular patients is vital to the final outcome of patients' ocular problem. There is need to have a standardized ophthalmology referral guideline for the primary care physicians to ensure prompt and appropriate referral aiming at good management outcome of patients with visual complaints.

## Recommendations

The recommendation based on the findings from this study is that referral guidelines be made available in the health clinic, written referral

should be enforced and two-way referral method would give feedback which may show that not all visual impairment need only correction with spectacle. There should be continuous professional education among the primary care physician to ensure that the job specification of the various eye care professional should be properly utilised to prevent the economic cost of vision loss due to secondary delay in patient with eye conditions.

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