

Treatment and Referral Pattern of Glaucoma Patients: A Survey of Practicing Optometrists

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Abstract

Aim: To determine the treatment and referral pattern of glaucoma patients by optometrists in Nigeria.

Study Design: This was a cross-sectional study of optometrists during their annual conference.

Place and Duration of Study: This study was carried out by generating data via structured questionnaires filled during the annual conference of optometrists in Nigeria held in Calabar, Nigeria 2019.

Methodology: This was a cross sectional study of 64 optometrists who consented to fill the structured questionnaire during the annual conference of optometrists which is the largest gathering of optometrists in Nigeria. Data was generated and entered into Microsoft excel sheets from where they were analyzed using SPSS version 20. Descriptive variables were presented as percentages while ANOVA was used for comparison.

Results: A total of 64 respondents answered the questionnaire out of which 29 (45.3%) were male while 35 (54.7%) were female. The mean age was 35.5 ± 2.566 with an age range of 20 - 60 years. 59.4% had been practicing for more than 10 years post qualification, 54.7% practiced in the private sector, 73.4% made a diagnosis of glaucoma at least every week 60% said they performed routine funduscopy on all patients before refraction, 42.2% said their diagnosis of glaucoma was based on tonometry, funduscopy and perimetry findings, after diagnosis only 12.5% would consider referring the patient to the ophthalmologist for treatment, 50% of the patients under their care spent N6,000 to N 10,000 (\$16 - \$28) monthly for treatment

Conclusion: 73.4% of the optometrists interviewed make a diagnosis of a new glaucoma patient every week but only 12.5% of them consider referral to an ophthalmologist. Glaucoma is the highest cause of irreversible blindness and a proper treatment and referral protocol needs to be put in place to manage glaucoma.

Keywords: Optometrists; Glaucoma; Pattern of Treatment and Referral

Introduction

Glaucoma is a disease in which damage to the optic nerve occurs leading to vision loss especially when poorly treated [1]. It has been estimated to account for irreversible blindness in 4.6-6.7million people worldwide [2] with the prevalence of the commonest form of glaucoma, Primary open angle glaucoma (POAG) in Africa (4.20%) being the highest of any region [3,4]. In Nigeria the prevalence of glaucoma is 5.02%in adults 40years and above [5].

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The commonest forms of glaucoma are the primary open angle glaucoma and the angle closure glaucoma. A glaucoma diagnosis will depend on several things including measurement of intraocular pressure, gonioscopy, funduscopy, perimetry, nerve fiber analysis and pachymetry [6]. A diagnosis of glaucoma based on tonometry result alone is not accurate. This study aims to look at the practice pattern of optometrists with regards to management of glaucoma patients.

Materials and Methods

This is a cross-sectional study of optometrists during their annual conference, Calabar 2019. Optometrists who consented were given a structured questionnaire to fill while ensuring their anonymity. Data generated was entered into Microsoft excel sheets from where they were analyzed using SPSS version 20. Descriptive variables were presented as percentages.

Results

There were a total of 64 respondents.

A total of 64 respondents answered the questionnaire out of which 29 (45.3%) were male while 35 (54.7%) were female. The mean age was 35.5 ± 2.566 with an age range of 20 - 60 years. 59.4% had been practicing for more than 10 years post qualification, 54.7% practiced in the private sector, 73.4% made a diagnosis of glaucoma at least every week 60% said they performed routine funduscopy on all patients before refraction, 42.2% said their diagnosis of glaucoma was based on tonometry, funduscopy and perimetry findings, after diagnosis only 12.5% would consider referring the patient to the ophthalmologist for treatment, 50% of the patients under their care spent N6,000 to N 10,000 (\$16 - \$28) monthly for treatment.

S/N	Characteristics	Frequencies	Percentage
1	Age		
	20 - 30	18	28.1
	31 - 40	29	45.3
	41 - 50	12	18.8
	51 - 60	5	7.8
	Range	40	
	Minimum	20	
	Maximum	60	
	Mean	35.5	
Std. Deviation	2.566		
2	Sex		
	Male	29	45.3
	Female	35	54.7
3	Years of experience		
	Less than 10yrs	26	40.6
	10 - 20yrs	26	40.6
	21 - 30yrs	7	10.9
	31 - 40yrs	5	7.8
4	Education		
	B.Sc	7	10.9
	O.D	52	81.3
	Any Additional Qualification	5	7.8

Table 1: Demographic information on the respondents.

Place of Practice	Frequency	Percent
Government owned 1 ^o or 2 ^o health Care facility	14	21.9
Tertiary health Care facility	11	17.2
I own or work in an Optometry Clinic	25	39.1
I work in an Ophthalmology Clinic	10	15.6
Unemployed	4	6.3
Total	64	100.0

Table 2: Respondents' place of practice.

Diagnosis of cases of glaucoma	Frequency	Percent
Almost daily	23	35.9
Every Week	24	37.5
Every Month	4	6.3
Occasionally	13	20.3
Total	64	100.0

Table 3: How often do you diagnose new cases of glaucoma?

Performance of routine funduscopy	Frequency	Percent
A few	6	9.4
About half	5	7.8
Most of them	14	21.9
All of them	39	60.9
Total	64	100.0

Table 4: What Percentage of your patients do you perform routine funduscopy before refraction?

Criteria for Diagnoses of glaucoma	Frequency	Percent
Funduscopy alone	6	9.4
Intraocular Pressure	4	6.3
CVF	27	42.2
All of the above	27	42.2
Total	64	100.0

Table 5: What are your criteria for Diagnoses of glaucoma?

Next action after glaucoma diagnosis	Frequency	Percent
Counsel the patient	21	32.8
Commence treatment	31	48.4
Send the patient for a confirmatory test	4	6.3
Refer the patient to an ophthalmologist	8	12.5
Total	64	100.0

Table 6: After making the diagnosis what is your next line of Action?

Frequency of Consultancy by glaucoma patients	Frequency	Percent
Weekly	20	31.3
Monthly	40	62.5
Quarterly	3	4.7
Yearly	1	1.6
Total	64	100.0

Table 7: How often do you see the glaucoma patient under your care?

Choice of drugs/treatment	Frequency	Percent
IOP	38	59.4
Visual acuity	9	14.1
Cup-disc ratio	12	18.8
CVF	4	6.3
Pachymetry	1	1.6
Total	64	100.0

Table 8: What determines your choice of drugs/treatment?

Income spend monthly on drugs	Frequency	Percent
Less than N2,000	6	9.4
About N2,000 - N5,000	13	20.3
N6,000 - N10,000	32	50.0
More than N10,000	13	20.3
Total	64	100.0

Table 9: Approximately how much do the patients spend monthly on drug?

**When do you decide to send a patient for glaucoma surgery?*

None of the respondents indicated when they send a patient for glaucoma surgery.

Lose their vision to glaucoma	Frequency	Percent
10 - 19%	56	87.5
20 - 29%	2	3.1
30 - 39%	5	7.8
40 - 49%	1	1.6
More than 50%	0	0.0
Total	64	100.0

Table 10: About what percentage of patients eventually lose their vision to glaucoma?

Percentage of Glaucoma patients already blind	Frequency	Percent
10 - 19%	49	76.6
20 - 29%	9	14.1
30 - 39%	3	4.7
> 50%	3	4.7
Total	64	100.0

Table 11: About what percentage of patients come to your facility already blind in one or both eye(s)?

Discussion

Glaucoma is a chronic optic neuropathy and patients need to be managed for life. It is the commonest cause of irreversible blindness and must be managed with all sense of urgency. All optometrists no matter their level of licensure are expected to diagnose the condition or at least to recognise that a problem exists and refer the patient to another practitioner [6]. Several countries have well established preferred practice guidelines concerning glaucoma care. The typical care pathway in Australia involves screening and initial diagnosis by an optometrist, subsequent testing to confirm diagnosis then initiation of treatment to lower intraocular pressure and subsequent referral to an ophthalmologist to consider treatment options [7].

The practice guideline of the American Optometric association considers co management of a patient with Primary Open Angle Glaucoma with a glaucoma specialist as important for optometrists and encourages this [8]. Several studies have tried to evaluate the efficacy of specially trained optometrists in glaucoma versus glaucoma specialists in evaluation of patients. One of such [9] found a 68.5% agreement in evaluating glaucoma stability, 64.5% disc assessment and 84.5% intra ocular pressure while for timing of management and referral 72% agreement existed. The Eye Care Quality and Accessibility Improvement in the Community project (EQUALITY) is a programme set to evaluate the teleglaucoma program used to evaluate the screening and management of glaucoma patients where optometrists in vision centres evaluate patients and send to ophthalmologists who review and provide feedback on management [10]. The rationale behind this is to evaluate the need for non-medical health care professionals in the management of glaucoma patients with glaucoma.

In Nigeria, the Act Cap 09, [11] states several ocular conditions which are out of the scope of optometry and must be referred to the ophthalmologists. There is however no clearly defined management pattern or practice guideline for glaucoma in Nigeria. A study by Ov-enser- Ogbomo GO., *et al.* [12] showed that 70% of optometrists referred out their glaucoma patients to an ophthalmologist which varies from our study as only 12.8% would consider referring their patients to ophthalmologists, in both studies however most optometrists admitted to initiating medical treatment early before referral.

Awoyesuku EA., *et al.* [13] found that optometrists contributed only 10% of referrals of glaucoma patients at a tertiary care facility and most of the patients referred by them were in advanced stages of glaucoma. This is also corroborated by the fact that over 80% of the respondents in our study admitted to approximately 20% of their patients eventually losing their sight and about same proportion also presenting with very advanced disease or loss of sight.

It is noteworthy that no optometrist considered referring their glaucoma patients for surgery in our study. This is not very different from studies done in Africa where surgical uptake of glaucoma has been noted to be poor [14].

Most of the optometrists in our study practiced in urban centres and majority owned optometry practice. Available evidence shows that the health care system in Nigeria is failing in the management of glaucoma. Several approaches may have to put in place to tackle this including developing models for glaucoma care and strengthening existing health care pathways [15].

There has also been increased momentum about glaucoma care in Africa. The 1st African Glaucoma Symposium in Ghana [16] and the Kampala resolution [17] all highlight the importance of controlling blindness from glaucoma in Sub Saharan Africa.

The Glaucoma Society of Nigeria, an association of glaucoma subspecialist Ophthalmologists are in advanced stages of producing a preferred practice pattern of Glaucoma in Nigeria to help streamline the management of Glaucoma in Nigeria [18].

Conclusion

Glaucoma is an important cause of blindness in Africa. A large proportion of optometrists in our study did not refer glaucoma patients seen by them to Ophthalmologists. Majority of them also admitted approximately 20% of their patients lost vision from glaucoma.

A collaboration is encouraged to aid prompt referral of patients diagnosed by optometrists to Ophthalmologists for proper management.

There is also a need to have a 'preferred practice pattern of Glaucoma in Nigeria', to streamline the management of Glaucoma in Nigeria.

Competing Interests

Authors have declared that no competing interests exists.

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