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Socio-demographic characteristics and ocular status of participants attending world glaucoma week screening

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Abstract

Background: A large and growing body of evidence shows that socio-demographic factors – age, race, ethnicity and language as well as socioeconomic status (SES), such as income and education, can influence health seeking behaviours and thus health outcomes. Worldwide, the pattern of ocular diseases varies from one location to another. However, cataract, glaucoma, conjunctivitis, refractive errors, pterygium are considered the common ocular disorders. This study is aimed at finding the socio-demographic characteristics and ocular status of participants at a screening programme.
Methods: A cross sectional population-based study conducted among individuals who voluntarily sought to be screened for glaucoma and ocular conditions during the 2020 World Glaucoma Week. Pre-validated self/interviewer administered questionnaire was used for socio-demographic information while clinical data was obtained from eye examination. Data so obtained was analyzed using SPSS version 25.
Results: There were 139 (60.2%) female participants and 92 (39.8%) male participants in the ratio 1.5:1. Age group 31-40 years was the highest. Participants with post-secondary education only was 80 (34.6%) while 64 (27.7%) had primary education only, civil/public service was the highest occupation 72 (32.9%).The commonest diagnosis were presbyopia ±refractive error 56 (20.1%) and cataract 52 (18.6%). One hundred and sixty three (70.5%) had a VA of 6/18 or better while 39 (16.9%) had a VA of ≤3/60(CF) in the RE. Twenty one (10.4%) participants had a VCDR.>0.7 RE.
Conclusion: Uncorrected refractive errors/ presbyopia remains the predominant cause of visual impairment. Cataract and glaucoma are still the commonest causes of preventable and avoidable blindness respectively.

Key word: socio-demographic factors, visual impairment, screening

Introduction

A large and growing body of evidence shows that socio-demographic factors such as age, race, ethnicity and language as well as socioeconomic status (SES), such as income and education, can influence health outcomes.[1,2] Studies have shown that increasing age is the most important predictor of blindness. However the female sex, low educational attainment as well as low SES have also been shown to be associated with blindness.[3,4] Rim et al found that there was a substantial socio-demographic disparity in eye care utilisation in Korea, and that men with low financial income and education level were especially at risk.[5] An eye camp survey in Uyo, South-South Nigeria showed that poor financial status of the participants and fear of cataract surgery were the most common reasons given for poor utilization of available cataract services.[6]
Worldwide, the pattern of ocular diseases varies from one location to another. However, cataract, glaucoma, conjunctivitis, corneal ulcers, uveitis,

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refractive errors, pterygium are considered the common ocular disorders.[7] Some studies carried out in Nigeria[8,9] showed that refractive error, conjunctivitis and cataract were the three most common causes of ocular morbidity. Results from Tema Eye Survey in an urban West African population showed that uncorrected refractive error, followed by cataract, glaucoma and corneal disease were major causes of blindness and visual impairment.[10]

Glaucoma is a group of diseases that cause structural damage and visual field dysfunction, leading to progressive and irreversible vision loss.[11] It is the second leading cause of blindness globally, accounting for 8% of blindness.[12] It is also the leading cause of irreversible blindness globally.[12] Patients with glaucoma are also at risk of developing other eye diseases such as cataract and age-related macular degeneration (AMD), and this risk increases as the life expectancy increases.[13,14] Moreover, some eye diseases are more commonly associated with glaucoma, e.g., retinal vein occlusion (RVO) of which most commonly is central retinal vein occlusion (CRVO).[15-17]

World Glaucoma Week is a global joint initiative between the World Glaucoma Association (WGA) and the World Glaucoma Patient Network (WGPN), in order to raise awareness on glaucoma. This study is aimed at finding the socio-demographic characteristics and ocular status of participants at a screening programme during the world glaucoma week celebration in Uyo Akwa Ibom state of Nigeria and data so obtained will help form the framework for policy makers on community-based intervention programs which could be incorporated into the state primary eye health care.

Materials and methods

This study was a cross sectional population-based study conducted among individuals who voluntarily sought to be screened for glaucoma and other ocular conditions during the 2020 World Glaucoma Week. This was done following a state-wide media jingle of a free eye care camp. The location of the study was in Uyo, the state capital. All attendees of the screening program were registered and self/investigator administered questionnaire was given after written consent was obtained. Vision was assessed with Snellen and illiterate E- chart at 6 meters for distant and a near vision chart for near-vision at 33cm in a well-lit environment. Anterior segment examination was done using a penlight ± X7 head loupe. Posterior segment examination was done (by different ophthalmologists after adjusting for inter-observer's error) with Beta 200 direct ophthalmoscope while intra-ocular pressure was done using Perkin's hand-held tonometer (Perkins TonometerMk2, Haag Streit UK Ltd). Distant visual acuity of 6/9 or less which improved with pin hole was taken as refractive error, while near vision of less than N8 which improved with reading Add was taken as presbyopia. Cup-disc ratio of > 0.5 was taken as suspicious disc, >0.7 and disparity of > 0.2 between the two eyes was taken as glaucomatous disc cupping. Intra-ocular pressure was not measured for all cases as the tonometer broke down in the cause of the programme. Inclusion criteria included all consenting individuals who turned up for the screening exercise.

Pre-tested and validated questionnaire to answer research questions on socio-demographic parameters and ocular health status was used. Data collected included age, gender, level of education and occupation. Specific questions on source of information about glaucoma, diagnosis, treatment and duration of glaucoma, symptoms of other eye diseases experienced by the participants were asked. Questionnaire was developed in English and a translator for the local language was used when necessary. The questionnaire was administered in interviews conducted by ophthalmic nurses who have been previously trained.

Informed written consent was obtained from all subjects and the study complied with tenets of Helsinki on research. Data obtained were coded and fed into Statistical Package for the Social Sciences version 25.0 (SPSS, IBM Corp., Armonk, NY, USA). For descriptive statistics, frequencies and percentages were used for categorical variables in univariate analyses. In bivariate analyses, using p value as inferential statistics, value less than 0.05 at 95% confidence interval was considered statistically significant.

Results

The age and sex distribution of the participants showed that the age group 31-40 years had the highest participants 54 (23.4%) followed by 51-60

Table 1: Age and sex distribution

Age group	Male n=92(%)	Female n=139(%)	Total n=	(%)
=20	6 (6.5)	8 (5.3.)	14	(6.1)
21-30	3 (3.3)	12 (8.6)	15	(6.5)
31-40	13 (14.1)	41 (29.5)	54	(23.4)
41-50	14 (15.2)	38 (27.3)	53	(22.9)
51-60	18 (19.6)	24 (17.3)	42	(18.2)
61-70	28 (30.4)	9 (6.5)	37	(16.0)
=70	10 (10.9)	6 (4.3)	16	(6.9)

Source: original

Table 1 shows the age and sex distribution of the participants. Age group 31-40 years had the highest participant 54(23.4%) followed by 51-60 years 53(22.9%). There were more female participants 139(60.2%) than males 92(39.8%) in the ratio 1.5:1

Table 2: Cross tabulation of sex with education and occupation

	Male	*Female*	*Total*	*P value*
Education				
No formal education	4	7	11(4.8%)	P=0.049
Primary	37	27	64(27.7%)	
JSS	1	4	5(2.2%)	
SS	22	40	62(26.8%)	
OND	8	18	26(11.3%)	
HND/1st Degree	17	37	54(23.4%)	
Postgraduate	3	6	9(3.9%)	
Total	**92(39.8%)**	**139(60.2%)**	**231(100%)**	
Occupation				
Civil/public servants	19	54	76(32.9%)	P=.002
Trader	16	27	43(18.6%)	
Farmer	12	13	25(10.6%)	
Clergy	3	1	4(1.7%)	
Student	8	15	23(10.0%)	
Unemployed/dependant	11	17	28(12.1%)	
Professional	1	0	1(0.4%)	
Pensioner	13	4	17(7.4%)	
Technician	5	1	6(2.6%)	
Others	4	4	8(3.5%)	
Total	**92(39.8%)**	**139(60.2%)**	**231(100%)**	

Table 2 shows that there were 92(39.8%) males and 139(60.2%) females in the ratio 1:1.5. Eleven (4.8%) had no formal education, 64(27.7%) had only primary education, 62(26.8%) had senior secondary education, while 80(34.7%) had post-secondary education and 9(3.9%) had postgraduate education, p=.049. Most of the participants were civil servants 76(32.9%) followed by traders 43(18.6%). As many as 28(12.1%) were unemployed/dependants, p= .002

years (53, 22.9%). There were more female participants 139 (60.2%) than males 92 (39.8%) in the ratio 1.5:1. Eleven (4.8%) had no formal education, 64 (27.7%) had only primary education, 62 (26.8%) had senior secondary education, while 80 (34.7%) had post-secondary education and 9 (3.9%) had postgraduate education, p= (0.049). Most of the participants were civil servants 76 (32.9%) followed by traders 43(18.6%). As many as 28 (12.1%) were unemployed/dependants, p= (0.002).Awareness of glaucoma by males 81 (88.0%) and females was similar 122 (87.7%) and total awareness 203 (87.9%) was high. All those with post graduate education as well as those with junior secondary had awareness of glaucoma while as much as 7 (25%) of unemployed had no awareness. Fewer clergy men 4 (36.4%) had awareness as compared to all other occupational groups, p= (0.032) and the most effective source of information was radio/television 117 (57.6%) followed by hospital 54 (26.6%). Twenty nine (12.6%) of the participants admitted they had glaucoma while 28 (12.1%) said they did not know. Twenty (8.7%) had a family history of glaucoma, 166 (71.9%) denied a family history of glaucoma while 45 (19.5%) did not know. Twenty one (71.9%) were diagnosed in the hospital, 4 (13.8%) outside the hospital, while the other 4 (13.8%) could not tell

Table 3: Awareness of glaucoma by sex, education &occupation

Sex	*Yes*	*No*	*Total*	*P value*
Male	81(88.0%)	11(12%)	92(39.8%)	.950
Female	122(87.7%)	17(12.3%)	139(60.2%)	
Total	**203(87.9%)**	**28(12.1%)**	**231**	
Education				
No formal education	8(72.7%)	3(27.3%)	11(4.7%)	.050
Primary	50(78.1%)	14(21.9%)	64(27.7%)	
Junior secondary	5(100%)	0(0%)	5(2.2%)	
Senior secondary	57(91.9%)	5(8.1%)	62(26.8%)	
OND	24(92.3%)	2(7.7%)	26(11.3%)	
HND/1st degree	50(92.6%)	4(7.4%)	54(23.4%)	
Postgraduate	9(100%)	0(0%)	9(3.9%)	
Total	**203(87.9%)**	**28(12.1%)**	**231(100%)**	
Occupation				
Civil/public servants	73(96.1%)	3(3.9%)	76(32.9%)	.032
Traders	38(88.4%)	5(11.6%)	43(18.6%)	
Farmers	22(88.0%)	3(12.0%)	25(10.8%)	
Clergy	4(36.4%)	7(63.6%)	11(4.7%)	
Student	16(69.6%)	7(30.4%)	23(10.0%)	
Dependants/unemployed	21(75%)	7(25%)	21(12.1%)	
Professional	1(100%)	0(0%)	1(0.4%)	
Pensioners	15(88.2%)	2(11.8%)	17(7.4%)	
Technicians	5(83.3%)	1(16.7%)	6(2.6%)	
Others	8(100%)	0(0%)	8(3.5%)	
Total	**203(87.9%)**	**28(12.1%)**	**231(100)**	

Table 3 shows that awareness of glaucoma by males 81(88.0%) and females was similar 122(87.7%) and total awareness 203(87.9%) was high. All those with post graduate education as well as thus with junior secondary had awareness of glaucoma while as much as 7(25%) of unemployed had no awareness. Fewer clergy men 4(36.4%) had awareness as compared to all other occupational groups, p= .032

Figure 1: Source of information about glaucoma

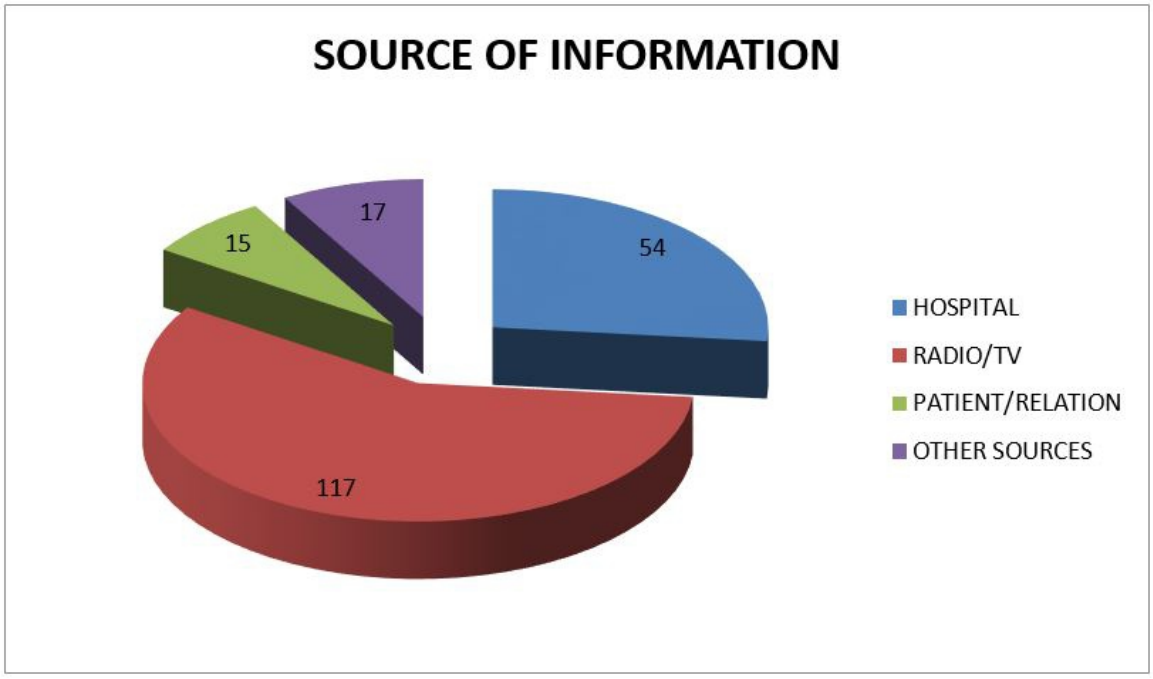

Figure 1 shows that most effective source of information is radio/television 117(57.6%) followed by hospital 54(26.6%)

Table 4: Those with glaucoma by family history and location of diagnosis

	Yes (%)	No (%)	Don't Know (%)
Do You Have Glaucoma	29(12.6)	174 (75.3%)	28(12.1%)
Family History of Glaucoma	20(8.7%)	166 (71.9%)	45(19.5%)
Location of Diagnosis			
Inside Hospital	21(72.4%)	0	
Outside of Hospital	4(13.8%)	0	
Can't Tell Where	4(13.8%)	0	

Table 4 shows that 29(12.6%) of the participants admitted they had glaucoma while 28(12.1%) said they did not know. Twenty (8.7%) admitted to a family history of glaucoma, 166(71.9%) denied a family history of glaucoma while 45(19.5%) did not know. Twenty one (71.9%) were diagnosed in the hospital, 4(13.8%) outside the hospital, while the other 4(13.8%) could not tell where diagnosis was made.

Table 5: Duration of glaucoma and treatment

	<1year	*1-5years*	*>5years*	*Don't know*
Glaucoma, how long	3(10.3%)	12(41.4%)	8(27.6%)	6(20.6%)
Treatment, how long	3(10.3%)	12(41.4%)	8(27.6%)	6(20.6%)

Table 5 shows 12(41.4% of those with glaucoma had it for 1-5years and have received treatment for that period of time, 8(27.6%) had it for more than 5 years, 3(10.3%) had it for less than a year while 6(20.6%) could not tell how long they have had the disease nor taken treatment.

Table 6: Number of eye drops used

Eye Drops Used	N=23	%
None	3	13.0
One	6	26.1
Two	4	17.4
Three	6	26.1
Four	4	17.4

Table 6 shows that 6 (26.1%) of those who admitted they had glaucoma were using one or three medications while 4(17.4%) used two or four medications each. Three (13.0%) were not on any treatment and none had undergone glaucoma surgery

where diagnosis was made. Twelve (41.4%) of those with glaucoma had it for 1-5years and have received treatment for that period of time, 8 (27.6%) had it for more than 5 years, 3 (10.3%) had it for less than a year while 6 (20.6%) could not tell how long they have had the disease nor taken treatment. Six (26.1%) of those who admitted they had glaucoma were using one or three medications while 4 (17.4%) used two or four medications each. Three (13.0%) were not on any treatment and none had undergone glaucoma surgery. The commonest diagnosis was presbyopia ± refractive error 56 (20.1%), 52 (18.6%) had cataract and 20 (7.2%) had refractive error only. A total of 27 (9.7%) were diagnosed with glaucoma,13 (4.7%) were glaucoma suspect and 1 (3.9%) had cataract with glaucoma. Other posterior segment findings included age related macular degeneration (AMD) 3 (1.1%), retinal detachment (RD)/Retinopathy 2 (0.7%), posterior vitreous detachment (PVD) 2 (0.7%). Six (2.2%) came for routine eye check and one was bilaterally blind from glaucoma. Presenting VA of 6/18 or better was seen in 163 (70.5%), 6/24-6/60 VA was seen in 29 (12.6%), VA of ≤3/60(CF) was seen in 39 (16.9%) in the RE. in the LE VA 6/18 or better was seen in 169 (73.1%), 6/24-6/60 was seen in 26 (11.3%) and ≤3/60(CF) in 36 (15.6%). VCDR of ≤0. 5 was seen in 165 (71 4%), VCDR 0.6-0.7 in 16 (6.9%), 0.8-0.9 in 14 (6.1%) while 7 (3.0%) had VCDR of 1. The LE was closely similar. One hundred and twenty seven (22.1%) came with only one complaint but as many as 102 (17.8%) came with multiple complaints. The commonest complain was blurring of vision 101 (17.4%), followed by itching/irritation 76 (13.2%). Presbyopia ± refractive error was seen in 85

Table 7: Prevalence of eye diseases among participants.

DIAGNOSIS	*N*	*%*
Glaucoma	27	9.7
Glaucoma suspects	13	4.7
Presbyopia	56	20.1
Refractive Errors with presbyopia	28	10.0
Refractive error alone	20	7.2
Cataract	52	18.6
Age-Related Macular Degeneration(AMD)	3	1.1
Allergic conjunctivitis	26	9.3
Non-glaucomatous optic atrophy	1	0.4
Corneal opacity	5	1.8
Retinal Detachment (RD)/retinopathy	2	0.7
Posterior Vitreous Detachment(PVD)	2	0.7
Pterygium	6	2.2
Traumatic eye injury	3	1.1
Anterior uveitis	3	1.1
Chalazion	2	0.7
Dry eye disease	11	3.9
Bilateral blind eyes	1	0.4
Glaucoma with cataract	11	3.9
Anterior staphyloma	1	0.4
Healthy eye/routine check	6	2.2
TOTAL	**279**	**100**

Table 7 show that the commonest diagnosis was presbyopia 56(20.1%), 52(18.6%) had cataract and 20(7.2%) had refractive error only. A total of 27(9.7%) were diagnosed with glaucoma,13(4.7%) glaucoma suspect, 11(3.9%) had cataract with glaucoma. Other posterior segment findings included AMD 3(1.1%), RD/Retinopathy 2(0.7%), PVD 2(0.7%). Six (2.2%) came for routine eye check and one was bilaterally blind from glaucoma

Table 8: Presenting visual acuity (Right and Left Eyes)

VA	*RE n=231(%)*	*LE n=231(%)*
6/6	92(39.8)	117(50.6)
6/9	42(18.2)	24(10.4)
6/12	15(6.5)	16(6.9)
6/18	14(6.1)	12(5.2)
6/24	6(2.6)	7(3.0)
6/36	16(6.9)	11(4.8)
6/60	7(3.0)	8(3.5)
CF	8(3.5)	9(3.9)
HM	13(5.6)	12(5.7)
PL	5(2.2)	7(3.0)
NPL	13(5.6)	8(3.5)

Table 8 shows presenting VA of 6/18 or better in 163(70.5%), 6/24-6/60 VA was seen in 29(12.6%), VA of ≤3/60(CF) was seen in 39(16.9%) in the RE. in the LE VA 6/18 or better in 169(73.1%), 6/24-6/60 was seen in 26(11.3%); ≤3/60(CF) 36(15.6%)

Figure ii: Optic disc/ cup-disc ratio findings in RE and LE

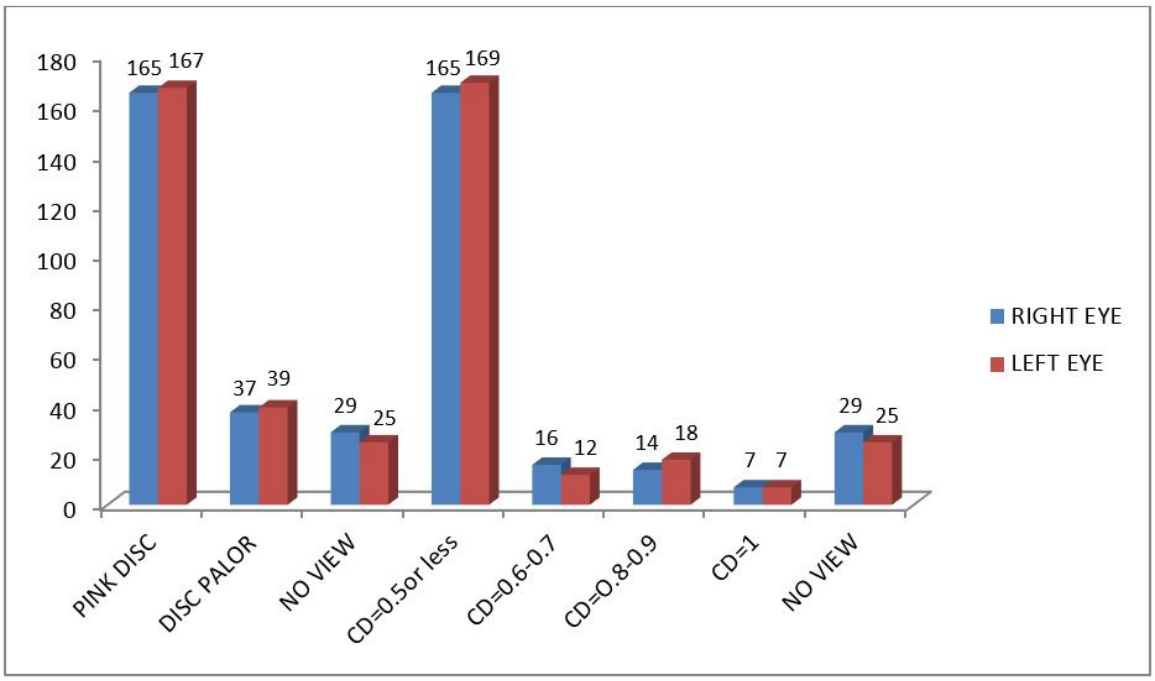

Figure ii RE showed VCDR of ≤0. 5 in 165(71 4%), 0.6-0.7 in 16(6.9%), 0.8-0.9 in 14(6.1%) while 7(3.0%) had VCDR of 1. The LE was closely similar

Table 9: Common complaints

COMPLAINTS	***N***	***%***
Blurring of vision	101	17.4
Itching /irritation	76	13.2
Tearing	31	5.4
Redness	56	9.8
Floaters	28	4.9
Flashes of light	25	4.4
Halos	21	3.7
Bumps into objects	5	0.9
One complaint	127	22.1
Multiple complaints	102	17.8
No complaints	2	0.4

Source: original

Table 9 showed that 127(22.1%) came with only one complaint but as many as 102(17.8%) came with multiple complaints. The commonest complain was blurring of vision101(17.4%), followed by itching/irritation 76(13.2%)

Table 10: Presenting Visual Acuity by diagnosis RE

VA	*6/6*	*6/9*	*6/12*	*6/18*	*6/24*	*6/36*	*6/60*	*CF*	*HM*	*LP*	*NPL*	*TOTAL*
Glaucoma	6	1	0	0	0	2	0	0	2	1	3	15
Glaucoma suspect	5	2	0	0	0	2	0	0	0	0	0	9
Presbyopia	36	8	6	0	1	0	0	0	0	0	0	51
Ref error +presbyopia	1	13	2	2	0	1	0	0	0	0	0	19
Cataract	0	0	1	3	1	6	1	4	4	3	1	24
Ref error only	6	3	1	2	0	2	1	0	0	0	0	15
Allergic conjunctivitis	13	3	1	0	0	0	0	0	0	0	0	17
ARMD	0	0	0	0	0	0	1	0	0	0	0	1
2^0 optic atrophy	0	0	0	0	0	0	0	0	0	0	1	1
Corneal opacity	0	0	0	0	0	1	0	0	0	0	1	2
Retinal Detachment	0	0	0	0	0	0	0	0	0	1	0	1
Pterygium	2	1	0	0	0	0	0	0	0	0	0	3
Trauma	0	1	0	0	0	0	0	0	0	0	0	1
Chalazion	1	0	0	0	0	0	1	0	0	0	0	2
Routine eye check	6	0	0	0	0	0	0	0	0	0	0	6
Dry Eye	1	1	1	0	0	0	0	0	0	0	0	3
Cataract +glaucoma	0	0	0	0	1	0	0	1	4	0	5	11
Others	15	9	3	7	3	2	3	3	3	0	2	50
Total	**92**	**42**	**15**	**14**	**6**	**16**	**7**	**8**	**13**	**5**	**13**	**231**

Table 10 shows presbyopia ±refractive error 85(38.8%), glaucoma+glaucoma suspect 24 (10.4%) cataract only 24(10.4%) cataract with glaucoma 11(4.8%) allergic conjunctivitis15 (7.4%) refractive error only 15(6.5%)

(38.8%), glaucoma+ glaucoma suspect was seen in 24 (10.4%) cataract only in 24 (10.4%) cataract with glaucoma was seen in 11 (4.8%) allergic conjunctivitis in 15 (7.4%) while refractive error only was seen in 15 (6.5%).

Discussion

Glaucoma continues to be the commonest cause of avoidable blindness globally despite the renewed strength to create yearly week-long World Glaucoma awareness campaign. The 2020 World Glaucoma Week celebration was marked in our tertiary institution with a free eye screening which was well advertised in the media. This ensured that participation was open to a wide range of people of different ages and occupations. Almost 60% of the participants were 50 years or younger, this is not surprising as Uyo is the state capital and many people who are in their active working years live in the capital city. This finding therefore showed that the screening programme served as a veritable opportunity for early discovery of glaucoma and hence treatment of the young people in the population thus reducing the burden of blindness. The location of the screening exercise (state capital) may have skewed this population as over 90% participants had a form of education with majority being civil servants.

Glaucoma awareness among participants was high 203 (87.9%) compared to 48.2% in an earlier study by Abraham et al[18] among general out patients in South-South Nigeria

Glaucoma awareness was noted to be associated with education p= (0.05) and occupation p= (0.03) but not with gender p= (0.95). As in our study, some earlier studies in Chenai, India[19] and Ghana[20] showed that education played a positive role in the knowledge and awareness of glaucoma among the participants but contrary to our study, the Indian study also showed gender bias as their female participants were more aware and knowledgeable about glauocoma.[19] The media was the commonest source of glaucoma education among the subjects. This has been corroborated by earlier studies.[21]

Among those with glaucoma, less than 10% had a family history. This is lower than the findings by Green et al in a study in Tasmania, Australia where approximately 60% of POAG was familial. The study was gathered from all the identified probands along with their family members who were invited to participate in the study.[22] Over 70% glaucoma subjects had their diagnosis made in a hospital setting while consulting for other eye symptoms. This points to the fact that opportunistic diagnosis remains common and may account for late presentation and advanced disease in our population. In our cohorts, majority had suffered with glaucoma between 1-5 years, present with advanced symptoms including blindness and were using more than one anti-glaucoma medications(Tables 5&6). This is similar to findings in earlier studies by Omoti et al[23] and Kizor –Akariwe et al.[24] The late presentation may be associated with the economic status of the patient,[25] since we are in a poor resourced country and generally the poor are those that present themselves for open screening outreach like this one.

Refractive errors with Presbyopia constituted the commonest cause of visual impairments among the participants. Cataract, Glaucoma and allergic conjunctivitis were the next common ocular disorders in that order. This follows the trend reported by two Nigerian studies.[7,8] In a Ghanaian study,[10] refractive errors, cataract and glaucoma were predominant causes of visual impairment among the West African Population. In Nepal, Bastola et al[9], also found out that uncorrected refractive errors, cataract and glaucoma were responsible for defective vision in the Asian population.

Over 70% had a presenting visual acuity between 6/6 and 6/18 which improved with pin-hole/reading Add pointing to the fact that visual impairment is mostly due to refractive errors or presbyopia. Patients with cataract followed by glaucoma presented with the worst visual acuity. This is in line with the findings in a study by Issuwami et al in Oshogbo, Nigeria,[26] and Mehari in Ethiopia.[27] Also in a study carried out in rural and urban Beijing, China, it was found out that cataract, degenerative myopia, glaucoma and corneal opacity were the commonest causes of low vision and blindness.[28]

Patients with glaucoma who still have good vision often come to hospital on account of different ocular condition. Duke et al[29] reported that most patients in their cohort with glaucoma reported at the blinding stages of the disease. Therefore, waiting for patients to present in the hospital, the so-called opportunistic diagnosis is not the best way to curtail glaucoma blindness. Routine glaucoma outreach screening making use of World Glaucoma Week or similar programmes sponsored by institutions or good-spirited individuals would be more potent in the early detection of glaucoma in resource limited environment like ours.

Commonest complaints were those of irritation of ocular surface such as itching, tearing and redness. In a study in Ibadan, South-western Nigeria, Sarimiye et al[30] noted significant ocular surface disorders among their cohorts. Topical anti-glaucoma medications and the dry windy weather in West Africa could be contributory factors to ocular surface conditions in glaucoma patients.[31,32]

The conclusion drawn from this study was that uncorrected refractive error remains the predominant cause of visual impairment, while cataract and glaucoma are still the commonest causes of preventable and avoidable blindness respectively. The study is not without a limitation. It was carried out by a convenient sampling technique and may not be representative of the entire Akwa-Ibom state or Nigeria. However, it has provided the latest epidemiological information on a population who sought eye care service following a state-wide media campaign.

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Conflicts of interest: None to disclose

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