

Awareness and Knowledge of Glaucoma among General Medical Outpatients in a Nigerian Tertiary Hospital, Uyo Experience

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ABSTRACT

Glaucoma is the second leading cause of blindness worldwide and the leading cause of irreversible blindness. Awareness and knowledge about this blinding disease will increase the uptake of screening services. The aim of this research was to determine the level of awareness of glaucoma by general outpatient attendees and also their knowledge of the disease. This was a cross-sectional study of consenting patients attending the general medical outpatient between February and July 2016 using a semi- structured interviewer administered questionnaire to collect data on demographics (including education), awareness and knowledge of glaucoma. Of the 255 that responded to the questionnaire, 116(45.5%) were males and 138(54.5%) were females; age range 17-79 years (42.31±16.84). Twelve (4.7) had no formal education, 29(11.4) had primary education only, 17(6.7%) had junior secondary school only, 70(27.5) had senior secondary school only, while 127(49.8%) had tertiary education. Sources of information were hospital and mass media 43(35.0%) each. One hundred and twenty three(48.2%) had heard about glaucoma while 132(51.5%) gave a 'no' response. Eighty eight (34.5%) knew that glaucoma was an eye disease but only 1(0.4%) related it to the nerve and 3(1.2%) said it was caused by raised intraocular pressure while 40(18.0%) said it can be inherited. Sixteen (6.3%) said that loss of field of view was a sign of glaucoma. Ninety (35.3%) said that glaucoma can be treated. Only 21(8.2%) had ever had eye screening and 194(75%) of those who had not done eye screening had no reason for not doing. Knowledge of glaucoma in this population is very low. Health education through use of different media of information should be adopted.

Keywords: Awareness, Knowledge, Glaucoma, Eye screening

INTRODUCTION

Glaucoma is a group of eye diseases which is characterised by progressive optic neuropathy and characteristic changes and loss of visual field.¹ It has also been described as a neurodegenerative disorder of the optic nerve with acquired loss of retinal ganglion cells.² Glaucoma is the second leading cause of blindness worldwide and the leading cause of irreversible blindness.³ About 65 million people in the world are affected by glaucoma and a good number of them are unaware of their condition.^{4,5}

The Nigerian national blindness and visual impairment survey of those 40 years and above of 2007 showed that glaucoma is the second most common cause of blindness and the commonest cause of irreversible blindness in Nigeria.⁶ It is also the most common cause of functional low vision in Nigeria.⁷ From available epidemiological reports, up to 50% of glaucoma patients are already blind in one eye at presentation in Africa.^{8,9}

The prevalence of glaucoma in East, Central, and Southern Africa is estimated at 10,000 people per one million population. This may be higher in West Africa and Nigeria is in West Africa.⁹ Most cases of glaucoma in Africa are the primary open angle glaucoma (POAG).⁹ It may occur at an earlier age, it may be associated with a higher or normal intraocular pressure. At other instances it may be more rapidly progressive, causing patient to present to the hospital at the late stages of the disease.⁹ Glaucoma has no specific symptoms or signs from the actual onset of disease or the period prior to clinical manifestation of the disease but symptoms and signs at onset are what usually qualifies for complete screen-able disease.¹⁰ It is thus very important that the level of awareness of this disease in the general population be assessed and the need to raise awareness be ascertained as increased awareness about glaucoma will likely lead to increase case detection and by this may lead to reduction in blindness and visual impairment from glaucoma. Earlier studies have reported low level of awareness and knowledge of glaucoma in patients,^{11,12,13} as well as workers in health institutions.^{14,15} Blindness from glaucoma can be prevented if the disease is detected early and effective treatment initiated. Since this is one

disease with no symptoms or signs at the early stages, timely diagnosis is made possible by regular eye check.

Awareness was taken to mean that a person has heard something about the disease. Knowledge was taken to mean if the person knew what the disease was, what organ of the body was affected, some ways of presentation and possible methods of treatment. Without awareness and knowledge people will not likely avail themselves of the various screening programmes made available at the different levels of eye care. Studies have also shown that late diagnosis of glaucoma is an important risk factor for subsequent blindness and this has been seen to be associated with poor knowledge about the disease.¹⁶ Eye health education which influences people to participate in regular ophthalmologic care may be an important step to detect glaucoma early, thereby preventing needless blindness.

To the author's knowledge, few hospital based studies on awareness and knowledge of glaucoma have been carried out in other parts of the country but there is no known study done in this state, hence the need for this study. The aim of this study is to evaluate the awareness and knowledge level of glaucoma among general out patients who attend hospital for other disease conditions and the outcome of this study will provide baseline data for planning health education programs.

METHODS

Study area

Akwa Ibom State is located in south-south geopolitical zone of Nigeria, lying between latitudes 4°32'N and 5°33'N, and longitudes 7°25'E and 8°25'E. The State is bordered on the east by Cross River State, on the west by Rivers State and Abia State, and on the South by the Atlantic Ocean and the southernmost tip of Cross River State. Ibibios, Annangs and Oros are the predominant tribes.

The University of Uyo teaching hospital (UUTH) is the only tertiary health institution in the state and caters for eye care needs of patients both within the state and the neighboring states.

Study design/Sample size Determination

A cross sectional study on consecutive consenting patients/care givers attending the general outpatient department (GOPD) for other disease

conditions. Sample size was determined using the formula

$$N = Z^2 p(1-p) / d^2$$

n=minimum sample size,

z=1.96 at 95% confidence interval

p=estimated prevalence of awareness and knowledge of glaucoma from previous work

d= maximum allowable margin of error

Instrument

A semi structured questionnaire was administered to consecutive patients 17 years and above who attended the general outpatient department (GOPD) to collect data on demographics (including education) awareness and knowledge of glaucoma by two research assistants between February and July 2016. The questionnaire was pretested and fine-tuned. Non-consenting subjects were excluded from the study. The questionnaire was given to consenting consecutive patients/care givers in the GOPD

The response "heard of glaucoma" even before being recruited for the study was defined as awareness and having some understanding of the eye disease was defined as knowledge.

The following risk factor options were presented in the questionnaire: obesity, increased intraocular pressure (IOP), smoking, alcohol use, some drugs, family history, race, hypertension, diabetes, age, refractive errors, trauma and do not know. Treatment options presented in the questionnaire were eye drops, surgery, laser, no treatment and cannot say. Oral consent was obtained from the participants. Resident doctors of the department of Ophthalmology served as research assistants who administered the questionnaires.

Data collected was analysed using SPSS version 17 and results presented in tables and charts. Categorical variables were analyzed with the independent *t*-test and Pearson's chi-square test. A *P* value of less than 0.05 was considered statistically significant. Ethical clearance was obtained from the Ethical committee of University of Uyo Teaching Hospital.

RESULTS

Of the 300 questionnaires 255 (98.5%) responded. Of this, 116(45.5%) were males and 138(54.5%) were females (1:1.16). Age range 17-89 years (42.31±16.84). Majority 174(68.8%) were below 50 years while 81(31.8%) were over 50 years. Twelve (4.7%) had no formal education, 29(11.4%) had primary education only, 17(6.7%) had junior secondary school only,

70(27%) had senior secondary school only, while 127(49.8%) had tertiary education. Fifty three(20.9%) of our respondents were students and most in tertiary institution. Ninety four (36.9%) were artisans/petty traders, 15 (5.9%) were pensioners, 10 were dependants/ applicants, 20 were teachers /clergy, 63 were professionals/ public servants. One hundred and twenty three (48.2%) responded 'yes' to having heard about glaucoma while 132(51.5%) gave a 'no' response. Source of information was hospital 43(35.0%), mass media 43(35.0%), schools 14 (11.4%) patient with the disease 11(8.9%)

relations and colleagues at work 8(6.5%) and from many sources 4(3.25%). There were various responses to the symptoms of glaucoma with 29 (11.4%) saying that blurring of vision was an initial symptom, 26(10.2%) itching and tearing; 18(7.1%) related it to blindness as symptom, 9(3.5%) said pain was the initial symptom. Thirty five (13.2%) said that increased intra ocular pressure (IOP) was a sign of glaucoma, 16(6.3%), 17(6.7%) said loss of field of vision and loss of side vision respectively was a sign of glaucoma.

Table 1: Socio-demographic details of participants

Age	≤50years	>50years				
Sex	174(68.8%)	81(31.8%)				
	male	female				
Educational attainment	116(45.5%)	138(54.5%)				
	No formal education	Primary education only	Junior secondary	Senior secondary	Tertiary education	
Occupation	12(4.7%)	29(11.4%)	17(6.7%)	70(27.5%)	127(49.8%)	
	students	Artisans/petty traders	pensioners	Dependants/applicants	Teachers/clergy	Professionals /public servants
	53(20.8%)	94(36.9%)	15(5.9%)	10(3.9%)	20(7.8%)	63(24.7%)

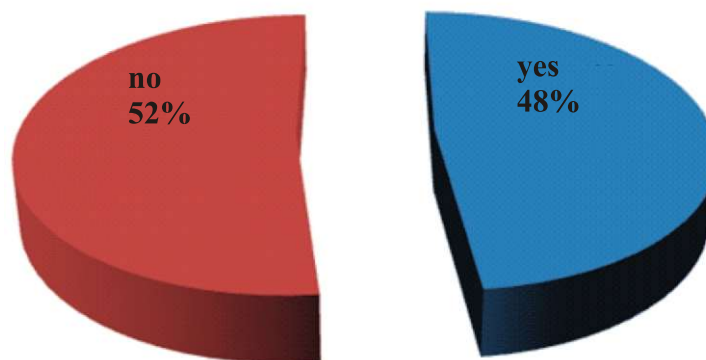


Figure 1: Awareness of glaucoma

Table 2: Heard of glaucoma * educational qualification Crosstabulation

		Educational qualification					Total
		No formal education	Primary	Junior secondary	Senior secondary	Tertiary	
Heard of glaucoma	Yes	2	6	1	25	89	123
	No	10	23	16	45	38	132
Total		12	29	17	70	127	255

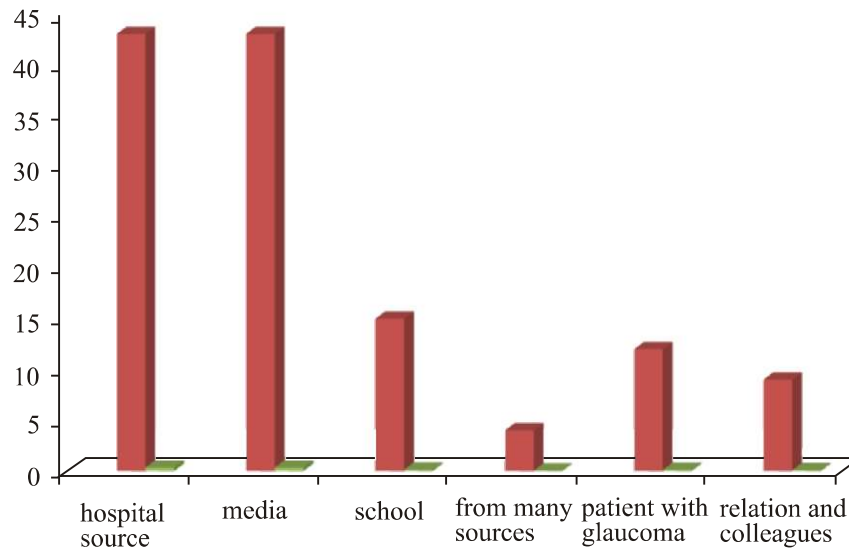


Figure 2: Bar chart showing the different sources of information about glaucoma

Table 3: Response on the knowledge of glaucoma

What is glaucoma?							
Eye disease	Increased IOP	Disease of the nerve	Do not know				
88(34.5%)	12(4.7%)	1(0.4%)	154(60.4%)				
What causes glaucoma?							
Environmental factors	Poor diet/evil spirit	Increased IOP	Trauma	Hereditary	Itching /infection	Increased blood pressure	Does not know
5(2.0%)	5(2.0%)	6(2.4%)	3(1.2%)	14(5.5%)	9(3.5%)	3(1.2%)	206(80.8%)
What symptoms of glaucoma do you know?							
Pain	Blurring of vision	Blindness	Itching /redness	All listed symptoms	No symptoms	Dont know	
9(3.5%)	29(11.4%)	18(7.1%)	26(10.2%)	6(2.4%)	4(1.6%)	163(63.9%)	
Do you know any sign of Glaucoma?							
Increased IOP	Poor field of vision	Loss of side vision	Increased IOP +loss of side vision	Do not know			
35(13.2%)	16(6.3%)	17(6.7%)	5(2.0%)	180(70.6%)			
Can glaucoma be treated?							
Yes 90(35.3%)	No 15(5.9%)	Dont know 150(58.8%)					
What available treatment do you know							
Eye drops	Operation	Laser	Eye drop &operation	Native /spiritual	Do not know		
39(15.3%)	34(13.3%)	2(0.8%)	5(2.0%)	2(0.8%)	173(67.8%)		
Can glaucoma be inherited?							
Yes	No	Dont know					
46(18.0%)	28(11.0%)	181(71.0%)					
What are the risk factors of glaucoma?							
DM/HTN/Obesity	High IOP	Use of some drugs	Family History	Age	Smoking/Alcohol	Multiple factors	Dont know
17(6.7%)	10(3.9%)	4(1.6%)	21(8.2%)	3(1.2%)	4(1.6%)	19(7.4%)	172(69.4%)
Eye screening done							
Yes	No						
21(8.2%)	234(91.8%)						
If no why?							
Dont know where to do screening	My eyes are good, I dont need	No reason					
19(7.5%)	42(16.5%)	194(75%)					

DISCUSSION

Glaucoma is the commonest cause of irreversible blindness in the world. While we may not be able to stop glaucoma from occurring as the medical world is still unaware of the cause of primary glaucomas, we can stop blindness from glaucoma so thus effectively reducing the prevalence of blindness and moderate/severe visual impairment as we approach the end of 'Vision 2020 the Right to Sight. One sure way of doing this is by improving the awareness /knowledge level of the people about this disease

In this study 255 participants responded to the questionnaire, 116(45.5%) males, 138(54.4%) female 1:1.2. The slight female preponderance is similar to the findings by Ogbonaya *et al.* in Ebonyi¹⁷ and Isawunmi¹ where more women than men participated in the study but different from the studies in Ethiopia and Nepals.^{18,19} This difference may be cultural where the women may not be free to express themselves in the public without a family male's approval. Mean age of 42.3±16 years is higher than that of Ebonyi¹⁷ but lower than in many other studies which focused on those 40 years and above.⁶ Since glaucoma can also occur in those younger than 40 years, the authors thought it necessary to include the younger age group in this study.^{20,21} In our study, 123(48.2%) admitted to have heard of glaucoma. This is lower than the finding of Tenkir²⁰ in a clinic study in Ethiopia, but higher than the findings of Komolafe²² *et al.* on awareness among non-clinical hospital workers in a tertiary institution in Western Nigeria and Ogbonaya¹⁷ in Eastern Nigeria. This positive difference may be because of the eye health campaign that has been going on in Akwa Ibom state where the study was carried out in last few years.

Knowledge of glaucoma was seen to be very shallow. Only 88(34.5%) persons associated the disease with the eye, 12(9.7%) associated the disease with intraocular pressure and 14(5.5%) said it was hereditary. There is a wide gap between awareness and knowledge and knowledge is what empowers someone to take decision. This is the pattern also seen in an earlier study.¹⁷ Just being aware of a disease is not enough, there must be a reasonable level of knowledge about the disease to enable the person take an informed decision. In

this study sufficient knowledge appears to be lacking and is well manifested in the poor uptake of eye screening opportunities by the participants as also shown by this study 21(8.2%). In developed countries such as Canada and Australia studies found that 73% of 243 & 70% of 1711 respondents had heard of glaucoma while 29% & 20% could identify the accurate definition of awareness respectively.^{23,24}

Regarding treatment, 90(35.3%) knew that glaucoma is treatable. Thirty nine of this(15.3%) knew about treatment with drugs, 34(13.3%) treatment by operation, 5(2.0%) both drug and surgery. This is lower than what was seen in Western Nigeria¹ which is known to have longer established eye care services. Finding is similar to that of southern India where the survey showed that (39%) of the participants accepted that glaucoma can be treated but then 46% would not accept surgery.²⁵

Major source of information was hospital 43(34.9%) and the media 43(34.9%). This is similar to findings in other surveys,^{17,26} but in a survey by Pradesh *et al.*,²⁵ oral communication from person to person was the commonest source of information. These two avenues should be further explored to not only create awareness but also give more knowledge about the disease. Our study also showed that schools played a significant role in health education as 14(11.4%) got information from school and this can be improved upon by consciously reviewing the schools' curriculum to include mention of some commonly occurring diseases as is done in the case of HIV/AIDS. Those with higher education (senior secondary and tertiary education were more aware of glaucoma 114(57.9%) than those with little or no formal education 9(18.4%), and was statistically significant ($p=.000$). Other studies also collaborated his finding.^{17,26}

CONCLUSION:

Knowledge of glaucoma in this population was very low. Health education through use of information, education & communication (IEC) materials, radio and television and inclusion in school curriculum should be broadly targeted at the population to educate people about the risk factors and thereby prevent needless blindness.

Conflict of Interest: I declare that I have no financial or personal relationship(s) which may have inappropriately influenced me in writing this paper. The article has been read and approved by all the authors.

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