

## PATIENTS' KNOWLEDGE OF GLAUCOMA AND TREATMENT OPTIONS

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### ABSTRACT

**Aims:** To determine among glaucoma patients their knowledge of the disease; consequences; available treatment and their preferred treatment options

**Materials and Methods:** Interviewer- administered pre-tested questionnaire was administered to consecutive glaucoma patients at the Guinness Eye Center Onitsha in June and July 2004.

**Results:** Fifty- two patients aged 16 - 85 years who had glaucoma and had been on treatment for 6 months - 8 years were interviewed. 43 (82.7%) patients had primary school or higher education. Ten (19.2%) patients did not have any knowledge of glaucoma; only 41 (78.9%) patients were aware that glaucoma leads to irreversible blindness.

There was no significant association between disease knowledge and (1) age (OR 0.8; 95%CI: 0.24, -0.20;  $p>0.05$ ); (2) gender (OR 0.3; 95%CI: 0.42, -0.02;  $p>0.05$ ); (3) disease duration (OR 0.35; 95%CI: 0.51, -0.07;  $p>0.05$ ). Patients with at least primary school education were more likely to have knowledge of the disease than those without formal education (OR 6.3; 95%CI: 0.05, 0.75;  $p<0.05$ ). But there was no significant difference in disease knowledge between patients with post primary or higher education and those with primary school or less formal education (OR 0.3; 95%CI: 0, 0.4;  $p>0.05$ ). While 32 (61.5%) patients knew of surgery and or drug treatment, 31 (59.6%) would preferred drug treatment and 12 (23.1%) would accept any treatment option the doctor considered most effective.

Religious belief and cultural practice would affect the choice of treatment in 5 (9.6%) and 7 (13.5%) patients respectively.

**Conclusions:** The level of disease knowledge among glaucoma patients is low. This has negative implication for compliance with treatment of glaucoma. Persons without formal education are at the greatest risk. With 23.1% of the patients surrendering the choice of treatment to the doctor, ophthalmologists are challenged to always educate the patients on the nature and consequences of glaucoma while prescribing the most effective mode of therapy.

**Key Words:** Glaucoma, treatment, knowledge, Nigeria.

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### INTRODUCTION

Glaucoma is a blinding disease in which there is optic neuropathy, visual field defects and with or without raised intraocular pressure<sup>1</sup>. Glaucoma is the second cause of blindness in Nigeria<sup>2-4</sup>. The open angle glaucoma is the commonest type of the disease. Glaucoma is a chronic disease that also runs in families. Although some glaucoma genes have been localized, gene therapy for glaucoma is not yet clinically practised and scientific research is yet to provide any method for preventing glaucoma. Nevertheless disease progression could be halted or at least delayed by treatment.

Treatment modalities for glaucoma include drugs, surgical, and para-surgical (laser) approaches or a combination of these. Drug treatment especially for open angle glaucoma is usually prolonged. Some patients would need repeated surgical operation while others would still require drugs

even after surgery in order to control the disease.

Acceptability and compliance with treatment depends, among other factors, on the patient's understanding of the disease and knowledge of the available treatment options. We sought to obtain information from glaucoma patients in order to enable the planning and improvement of services for patients with this chronic blinding disease in our hospital and community.

This article reports on the knowledge/ awareness of glaucoma, its treatment and preferred treatment options by glaucoma patients seen at the Guinness Eye Center, Onitsha.

### MATERIALS AND METHODS

Consecutive glaucoma patients seen at the Guinness Eye Center Onitsha over an 8-week period in June and July 2004 were interviewed with a semi-structured questionnaire. The questionnaire was administered by a trained interviewer. The questions were first tested on non-glaucoma patients at the Diabetic Eye Clinic of the Nnamdi Azikiwe University Teaching

Hospital Nnewi and necessary modifications made before use in the present study.

Information was obtained on demographic characteristics, disease duration (time between diagnosis and recruitment for this study), knowledge of glaucoma; awareness of that glaucoma causes irreversible blindness; glaucoma treatment modalities and preferred treatment options. Also sought was the influence of religion and culture on the patients' attitude to the disease and its treatment. In this study a patient is considered to have some knowledge of glaucoma if his or her response to the question 'what is glaucoma?' or 'what do you know about glaucoma?' include any of the following: 'pressure problem with the eye' or 'damage to the nerves in the eye' or 'problem with ocular fluid circulation' or *isi anya eke* (the Igbo name for glaucoma). Concerning treatment options and particular preference, each patient was allowed to list or state all the options known to him or her and to state the first (preferred) option.

The influence of religion and culture on the attitude to the disease and its treatment was determined. The association between age, gender, education, disease duration and knowledge of glaucoma was explored with the odds ratio (OR) and 95% confidence interval (95%CI) estimation for proportion with alpha level at 0.05.

## RESULTS

Fifty-two patients with primary open angle glaucoma were interviewed. There were 29 males and 23 females. All the patients were of the Igbo ethnic group of Nigeria. While 48 (92.3%) were christians, 4 (7.7%) were adherents of Igbo (African) traditional religion. The age range was 16-85 years; mean 51.3 (7.1SD) years; the 40-59 year age bracket made up 52% of the patients; only 3.9% of the patients were aged less than 20 years (Table 1). The educational attainment of the patients is as follows: no formal education 9 (17.3%); primary school 15 (28.8%); post-primary school 17 (32.7%); tertiary institution 11 (21.2%). Figure 1 shows the occupation of the patients. Civil servants constituted 32% of the patients while traders made up 39.6%. Artisans included drivers and tailors.

The disease duration ranged from 6 months to 8 years and all the patients had been on some treatment for the eye problem. Twelve (23.1%) patients had been diagnosed of the disease for less than 1 year; 28 (53.8%) for 1-3 years and 12 (23.1%) for more than 3 years. Ten (19.2%) patients including 3 men and 7 women did not have any knowledge of glaucoma. While 41 (78.9%) patients were aware that glaucoma leads to irreversible blindness, 11 (21.1%) were not.

The relationship between age and disease

knowledge was not significant (OR 0.8; 95%CI: 0.24, -0.20;  $p>0.05$ ). No statistically significant gender difference was found with regard to disease knowledge (OR 0.3; 95%CI: 0.42, -0.02;  $p>0.05$ ). There was also no significant relationship between disease duration (< 1 year versus 1 year duration) and disease knowledge (OR 0.35; 95%CI: 0.51, -0.07;  $p>0.05$ ). Patients with at least primary school education were more likely to have knowledge of the disease than those with formal education (OR 6.3; 95%CI: 0.05, 0.75;  $p<0.05$ ). However there was no significant difference in disease knowledge between patients with post primary or higher education and those with primary school or less formal education (OR 0.3; 95%CI: 0, 0.4;  $p>0.05$ ).

Figure 2 shows knowledge of treatment options. While 32 (61.5%) knew of surgery and or drug treatment and 6 (11.5%) were aware of native (herbal) treatment. Concerning the preferred treatment option, 31 (59.6%) patients would prefer drugs; 9 (17.3%) surgery and 12 (23.1%) would accept any treatment option the doctor thinks is most effective. None of the patients opted for prayer or native (herbal) medicine as the preferred treatment although a patient said he would pray in addition to submitting to drug treatment.

Religious belief would affect the choice of treatment in 5 (9.6%) patients including 2 christians and 3 adherents of the traditional religion. Cultural practice also determined choice of treatment in 7 (13.5%) patients.

Table 1: Age and Sex Distribution.

Age (Years)	Male	Female	Total	%
<20	-	2	2	3.9
20 – 29	2	1	3	5.8
30 – 39	3	3	6	11.5
40 – 49	7	6	13	25.0
50 – 59	9	5	14	26.9
60 – 69	2	4	6	11.5
70 – 79	4	2	6	11.5
= 80	2	-	2	3.9
<b>Total</b>	<b>29</b>	<b>23</b>	<b>52</b>	<b>100.0</b>

Figure 1: Patients Occupation.

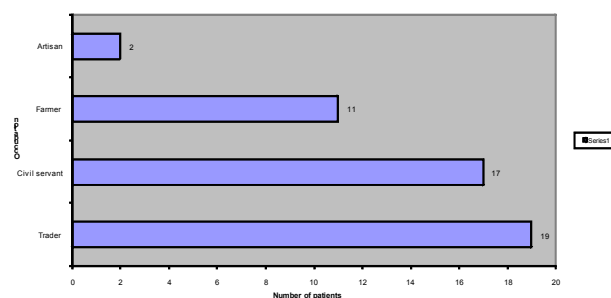
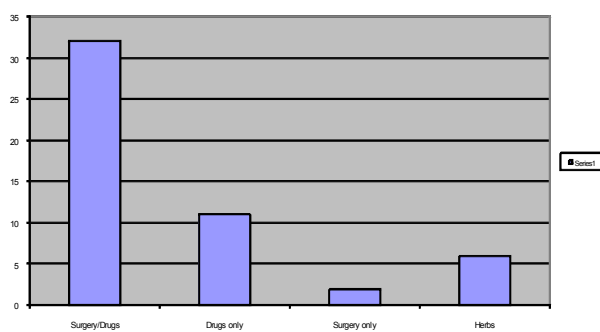


Figure 2: Awareness of treatment options.



## DISCUSSION

The results of this study suggest a low degree of knowledge of the nature and consequences of glaucoma by the afflicted. Patients' awareness of the treatment options currently available for the disease was also less than expected. More than 96% of the patients interviewed were adults and nearly 90% of the patients had formal education with more than half having secondary or tertiary education. Therefore responses of this cohort of patients should be taken as reliable. These findings are of concern because this cohort of patients had been diagnosed as having glaucoma and had been on treatment for a period ranging from 6 months to 8 years. In the light of these findings, a much lower level of glaucoma awareness is expected in the general population. A population-based study in Australia had reported serious deficiencies in the basic knowledge of glaucoma<sup>5</sup>.

Age, formal education, and gender inequality are some of the factors that determine knowledge of disease and attitude to treatment. However apart from lack of formal education which was significantly associated with increased risk of being ignorant of glaucoma the other variables did not significantly influence the knowledge of the patients about the nature and consequences of glaucoma. Acquisition of higher education when compared with having attained lower levels of formal education primary and post primary education did not also enhance the patients' chances of gaining reliable information about glaucoma. Therefore other factors are necessary to explain our findings.

Modern medicine is largely associated with western civilization and culture. The approach and concept are often different from those of African traditional medicine. The latter is deeply rooted in African traditional religion and culture. The fewness of the adherents of the African traditional religion in the present cohort of patients did not allow for statistical comparison. Although culture and religion

apparently were not important factors in determining the disease awareness and preferred treatment choice in this study, it is known that *juju* concept of disease is strong in Nigeria in spite of good exposure to western education and culture<sup>6</sup>. Thus it is not uncommon to see patients who while on western-oriented treatment still consulting *juju* priests, herbal healers and prayer houses. Our findings may have been affected by the design of the study which did not seek to explore the patients' concept of diseases, illness and health in this particular patient cohort. However an earlier community-based study in Anambra State had documented that people generally perceive eye diseases and blindness as being caused by evil spirits or enemy machination<sup>7</sup>. Only 17.1% of the patients would accept surgery as a treatment of choice although more than 65% of the patients were aware of combined surgical and medical treatment for glaucoma. This is comparable to the 18% acceptability reported by Bekibele et al in Ibadan<sup>8</sup>. Fear, treatment costs and unpleasant experience of neighbours had been documented as reasons for negative attitude to surgical treatment of eye diseases in rural Anambra State<sup>7</sup>. But an encouraging finding in this study is that 23.1% of the patients would submit to any treatment approach the attending physician considers best. This is an indication of the faith the patients have in modern eye care and also a challenge to the ophthalmologist who should not let such opportunity slip.

The implication of the results of this study is that mere acquisition of formal education may not be enough for patients to understand the nature of glaucoma and the implications of available treatment options. It should also not be assumed that patients understood the nature of their disease just because they had been receiving treatment for a while. The present study shows that persons without formal education are at the greatest risk of being ignorant about the nature of glaucoma and its consequences. These patients are likely to be conservative and may not comply with treatment. Such patients require the special attention of the ophthalmologist.

In conclusion it is recommended that apart from updating clinical and surgical skills for the optimal care of the patients, all eye health workers should also vigorously educate the patients and indeed the general public on prevalent eye diseases, their consequences and best treatment approach. The patients need be directly taught through repetitive health education. It must be realized that education alone may facilitate the understanding of the available treatment options but will not necessarily ensure acceptance of the options.

## REFERENCES

1. **Epstein DL.** A perspective on evolving definitions of glaucoma. Review of Ophthalmology 2001; 2(2): 4-5.
2. **Olurin O.** Causes of blindness in Nigeria. A study of 1000 cases W Afr Med J 1973; 22: 97-107.
3. **Nwosu SNN.** Blindness and visual impairment in Anambra State, Nigeria. Trop Geogr Med 1994; 46(6): 346 - 349.
4. **Abiose A, Murdoch I, Babalola O, et al.** Distribution and aetiology of blindness and visual impairment in mesoendemic onchocercal communities of Kaduna State, Nigeria. Br J Ophthalmol 1994; 78: 8-13.
5. **Livingston PM, Lee SE, De Paola C, Guest CS, Taylor HR.** Knowledge of glaucoma, and its relationship to self-care practices, in a population sample. Aust NZ J Ophthalmol 1995; 23(1): 37-41.
6. **Odebiyi AI.** The socio-cultural factors affecting health care delivery in Nigeria. J Trop Med Hyg 1977; 80: 249-254.
7. **Nwosu SNN.** Beliefs and attitude to eye diseases and blindness in rural Anambra State. Nigerian Journal of Ophthalmology 2002; 10: 16 - 20.
8. **Bekibele CO, Oluleye TS.** Acceptability of surgery for the primary treatment of chronic open angle glaucoma. A preliminary report. Nigerian Journal of Ophthalmology 1999; 7(1): 5-9.