

Causes of blindness in Southwestern Nigeria: A general hospital clinic study

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PURPOSE. *This hospital-based study was carried out to assess the common causes of blindness in Ibadan, the largest city in the southwestern part of Nigeria, and to strengthen the primary eye care approach to control and reduction of cases of blindness in the community.*

METHODS. *Following Hospital Ethical Board approval and informed consent of participants, a prospective study was performed in which 1,544 consecutive patients with bilateral or unilateral blindness seen between January and December 2003 at the Ring Road State Hospital, Ibadan, Nigeria, were evaluated for causes of blindness. Visual acuity was measured with an illuminated Snellen chart placed 6 meters away from the participants. This was followed by pen torch examination and dilated funduscopy with a direct ophthalmoscope. Friedman field analyzer was used to measure visual field. Patients with corrected visual acuity of less than 3/60 in the better eye or with visual field of less than 10 degrees from fixation were considered blind according to the World Health Organization criteria.*

RESULTS. *The 1,544 patients had a mean age of 53.5 years (range, 4 to 96 years); 858 (56%) were male and 686 (44%) were female. Blindness was bilateral in 471 (30%) patients and unilateral in 1,073 (70%). When those persons with unilateral and bilateral blindness were grouped together, individuals within the 60 to 79 years age bracket were 667 (44%) and constituted the largest group of all blind persons. The leading causes of bilateral blindness were cataract, 171 (36%); glaucoma, 138 (29%); and optic atrophy, 21 (4%). The most common causes of unilateral blindness were cataract, 446 (41%); glaucoma, 213 (20%); and those referable to trauma, 116 (11%).*

CONCLUSIONS. *Cataract and glaucoma are the main causes of bilateral and unocular blindness in the study area. (Eur J Ophthalmol 2006; 16: 604-7)*

KEY WORDS. *Blindness, Causes, Southwest Nigeria, Cataract*

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INTRODUCTION

Blindness is of interest to many authors. The World Health Organization (WHO) estimate showed that 37 million people are blind globally, while visual impairment was found in 161 million (1). This information is of interest to policy makers who are interested not only in its burden, but also for planning purposes. To the community, which is the primary stakeholder, blindness is a tragic phenomenon. At the global level, blindness prevalence is highest in developing coun-

tries. This fact has been of great concern to the WHO (2); hence its inclusion in the "Vision 2020" programme.

This hospital-based study was carried out to assess the common causes of blindness in patients who presented to the Ring Road State Hospital, Ibadan, during the study period. The general hospital located in Ibadan, the largest city in West Africa, attends to patients from southwestern Nigeria. The study strengthens the primary eye care approach to control and reduction of cases of blindness in the community.

MATERIALS AND METHODS

The study was a prospective study of 1,544 consecutive patients with bilateral or unilateral blindness seen at the outpatient department of the Ring Road State Hospital, Ibadan, Nigeria, from January 1, 2003, to December 31, 2003.

Information recorded for each consecutive patient included the age at time of presentation, sex, ophthalmic history, history of treatment, use of traditional eye medicines, surgical interventions (orthodox or traditional), and ocular examination.

Ocular examination included measurement of visual acuity with an illuminated Snellen chart placed 6 meters away from each participant. Corrected visual acuity was recorded for each patient after a retinoscopic refraction. Patients with corrected visual acuity of less than 3/60 in the better eye or with visual field of less than 10 degrees from fixation were considered blind according to WHO criteria. Slit-lamp examination, dilated ophthalmoscopy, and applanation tonometry was done in all blind patients. Visual field examination with Friedman field analyzer was done appropriately. One of the authors (O.T.S.) examined all of the patients to establish the causes of blindness. In each case, the cause of blindness was established as much as possible. Information obtained from each consecutive patient was entered into a data sheet specially prepared for the study.

Ethical approval

Before the conduct of the study, the authors obtained ethical approval from the Ethical Committee of the Oyo State Hospital Management Board.

Informed consent

Informed consent was obtained from consecutive patients who participated in the study after thorough explanation. Participants were allowed the option of abstention without fear of victimization or compromise of standard ethical practice.

Statistical analysis

All data were analyzed using the Epi-Info version 6 statistical package to generation frequency distribution of all variables. Data were summarized in simple proportions/ percentages. Data have been presented in simple tabular form (Tabs. I-IV).

RESULTS

A total of 1,544 patients diagnosed with bilateral or unilateral blindness were evaluated during the study period. A total of 858 persons were male while 686 were female, representing 55% and 45%, respectively. The male to female ratio was 5:4. The age range of patients was from 4 years to 95 years, with a mean age of 53.5 years.

A total of 471 (30%) patients had bilateral blindness while 1,073 (70%) patients had unilateral blindness. When those persons with unilateral and bilateral blindness were grouped together, individuals within the 60 to 79 years age bracket accounted for 667 (44%) and constituted the largest group of all blind persons.

The leading causes of bilateral blindness were cataract 171 (36%), glaucoma 138 (29%), and optic atrophy 21 (4%). The most common causes of unilateral blindness were cataract 446 (41%), glaucoma 213 (20%), and trauma 116 (11%).

DISCUSSION

The prevalence of blindness is increasing globally because of increased longevity due to improvement in health care delivery systems. A large burden of blindness is borne by developing countries (1, 3). This study showed that the majority of patients with blindness were above 40 years of age.

TABLE I - SEX DISTRIBUTION OF 1,544 UNILATERALLY AND BILATERALLY BLIND PERSONS

Blindness	Male	%	Female	%	Total	%
Bilateral	270	31	201	44	471	30
Unilateral	588	69	485	56	1,073	70
Total	858	100	686	100	1,544	100

TABLE II - AGE AND SEX DISTRIBUTION OF 1,544 (BOTH UNILATERALLY AND BILATERALLY) BLIND PERSONS

Age group, y	Male	%	Female	%	Total	%
0-9	23	3	10	1	33	2
10-19	56	7	33	5	89	6
20-39	170	20	79	12	249	15
40-59	225	26	194	28	419	27
60-79	344	40	323	47	667	44
80+	40	4	47	7	87	5
Total	858	100.0	686	100.0	1544	100.0

It is interesting that cataract was the leading cause of both bilateral and unilateral blindness. Cataract surgery with posterior chamber intraocular lens, which is the solution (4), can be made available and affordable through the integration of primary, secondary, and tertiary health services.

Glaucoma was found to be the second most common cause of bilateral and unilateral blindness in patients above 40 years of age. However, in patients with glaucoma the outlook is not as good as that for cataract. Our observation from this study is that our patients usually presented late, when significant vision had been lost. Previous workers have documented this impression (5, 6). Health education stressing regular eye examination for those at risk is advocated.

In our study, trauma was the third most common cause of monocular blindness. The injuries occurred while at

work or in children while playing. The tools of ocular trauma were sticks and missiles. Assault, road traffic accidents, and occupational hazards are important causes. It is important to emphasize eye health education, especially for industrial workers and supervision of children in schools, to prevent ocular trauma (7).

Optic atrophy was the third common cause of bilateral blindness and a significant cause of unilateral blindness. About one-third of cases of bilateral blindness from optic atrophy were associated with retinitis pigmentosa. Toxic damage to the optic nerve from local gin is common in tropical Africa (8). In many instances the cause of optic atrophy was not found (9). However, some workers (10) attributed this to a demyelinating disease of unknown origin affecting primarily the optic nerves.

Uncorrected aphakia was a significant cause of bilateral and unilateral blindness. Refraction and prescription of aphakic spectacles, especially for bilateral cases, and secondary implantation of posterior chamber intraocular lens is recommended in cases with intact posterior capsule. In many African communities such as Nigeria, traditional doctors are still practicing couching. Complications arising from such practice usually present late when useful vision has been lost.

It is also interesting that uncorrected refractive errors, especially high myopia and high hypermetropia complicated by amblyopia, presented as causes of blindness, when the remedy, which is refraction and prescription of spectacles if done early in life, appears so simple. This scenario is largely attributable to ignorance.

Other significant causes of bilateral blindness were longstanding pterygium, maculopathy from age-related macular degeneration, and retinal detachment. Age-related macular degeneration is an important cause of blindness and low vision in western Nigeria (11).

TABLE III - CAUSES OF (BILATERAL) BLINDNESS IN 471 PERSONS

Causes	Frequency	%
Cataract	171	36
Glaucoma	138	29
Optic atrophy	21	4
Corneal opacity	17	4
Couching	14	3
Aphakia	13	3
Refractive error	8	2
Pterygium	6	1
Compound causes	53	11
Others	38	7
Total	471	100.0

TABLE IV - CAUSES OF UNILATERAL BLINDNESS IN 1,073 PERSONS

Causes	Frequency	%
Cataract	446	41
Glaucoma	213	20
Trauma	116	11
Optic atrophy	57	5
Corneal opacity	30	4
Couching	28	3
Panophthalmitis	24	2
Phthisis bulbi	24	2
Retinal detachment	22	2
Maculopathy	21	2
Aphakia	20	2
Uveitis	20	2
Pterygium	15	1
Refractive error	12	1
Others	21	2
Total	1,073	100.0

CONCLUSIONS

The causes of blindness in this study were mostly preventable, avoidable, or treatable.

This study showed that cataract is the most common cause of bilateral and unocular blindness in southwestern Nigeria. It is noteworthy that glaucoma closely follows cataract as a leading cause of both bilateral and unilateral blindness. Increasing cataract surgical rate and eye-health education will reduce the magnitude of blindness from these diseases.

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