

Original Article

THE PREVALENCE AND CAUSES OF BLINDNESS AND LOW VISION IN OGUN STATE, NIGERIA.

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The prevalence and causes of blindness and visual impairment were determined in Yewa-North local government area of Ogun state, Nigeria between May 15 and June 22, 2001. A population - based survey using a random cluster sample of 1,964 persons representing 'usual' residents of the local government area was examined. The survey revealed that 1.22% of the populations were blind, 1.43% unilaterally blind and 2.09% were bilaterally visually impaired. Blindness and visual impairment were found in persons aged 45yrs and above. Blindness was found to be 2.43 times commoner in men, which was statistically significant. Cataract was the commonest cause of blindness accounting for 37.5% of blindness and 36.6% of visual impairment. Another important cause of visual impairment and blindness in this study was pterygium accounting for 23% and 19% of unilateral and bilateral visual impairment and 7% and 4% of unilateral and bilateral blindness respectively. The report showed that 87.5% of the blindness and 75.7% of the bilateral visual impairment were avoidable. These largely agreed with the pattern and causes of blindness in other parts of sub-Saharan Africa.

Key words: prevalence, causes, Blindness, visual impairment.

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INTRODUCTION

Blindness is not only a personal tragedy; it is an economic nightmare. An estimated 45 million people are blind, and 135 million people are visually impaired world wide. Of these 90% are from developing countries (Abiose, 1999)

The Global initiative, Vision 2020": the right to sight has a mission to eliminate the main causes of avoidable blindness in order to give all the people of the world, particularly the millions of needlessly blind, the right to sight by the year 2020. To achieve this there must be an appropriate definition of blindness, and reliable statistics on the number of blind persons, the distribution, the population at risk and the causes of blindness. Prevalence of blindness varies from country to country and within regions in the same country. In developed countries, prevalence of blindness ranges from about 0.05% to 0.2 %. Earlier in a study by Tabara *et al.*(1986) revealed blindness prevalence as high as 10% in Saudi Arabia.

Yewa - North local government area is one of the twenty local government

areas in Ogun state - one of the 36 States of Nigeria, situated in the South-western part of Nigeria. The population of the local government according to the 1999 projected census figure (based on the 1991 census) is 190, 853. It is bounded in the north by Imeko - Afon LGA, in the west by the Republic of Benin, in the south by Yewa south and Ipokia LGAs and in the east by Abeokuta North and Ewekoro LGAs. There is no form of orthodox eye care delivery services (whether government, mission or private owned) situated in the local government.

The purpose of this study was to assess accurately the prevalence and causes of blindness in Yewa- North local government area.

MATERIALS AND METHODS

The basic survey design was a 2-stage random cluster sampling model. The local government has been divided into 8 health districts, each comprising of 70-80 villages. 4 districts were randomly

selected in each health districts making a total of 8 villages. Each village has an average of 50 homes and each home an average of 6 people giving an average of 300 people per village. 8 villages were selected making a total of 2,400 people that were registered. The survey team include the authors, three staff nurses, two clerks from the local government secretariat that helped in identification and registration of the people, and a driver.

The World Health organisation for prevention of Blindness (W.H.O. /PBL) record format and the W.H.O. definition of blindness and visual impairment were used.

W.H.O defined blindness as visual acuity of less than 3/60 (20/400, 0.05) in the better eye with best possible correction, or a visual field loss in each eye to less than 10° from fixation. Low vision was defined as visual acuity of less than 6/18 (20/60), 0.3) but equal to or better than 3/60 in the better eye with best possible correction.

All registered persons had visual acuity done in front of their houses. Those with visual acuities less than 6/18 in either eye were transported to a health centre where ocular examinations were performed by the authors.

Minor ailments were given prescriptions and others were referred as indicated. Fundus examination was performed with the direct ophthalmoscope and where indicated dilated fundoscopy was done. Routine Shiotz's tonometry was done on all individuals age 40 years and above with visual acuity less than 6/18 in either eye. Glaucoma suspects also had Shiotz's tonometry performed on them.

Classification of blindness and diagnosis were done as recommended by the W.H.O. Precoded examination record forms were used for recording in accordance with the W.H.O. / PBE eye examination format.

RESULTS

A total of 1,964 persons (children and adult) were examined. These were 865 males and 1098 females giving a male: female ratio of 1: 1.27. This female

preponderance occurred in all age groups apart from the 15-29 year age group. Children and adolescence within the age group 0-14 formed 25 % of the sample, whilst elderly people above 60years of age constituted 26.02%. The age and sex distribution of the sample population is shown in Table 1.

Of the 1964 individuals examined during the study, 24 were blind in both eyes whilst 28 were blind in one eye. The prevalence of blindness and visual impairment is shown in Table 2.

Table 1:
Age and Sex Distribution of sample population

Age (Years)	range	Male (%)	Female (%)	Total (%)
0 –14		230 (11.71)	261 (13.2)	261 (13.29)
15 – 29		119 (6.06)	117 (5.96)	117 (5.96)
30 -44		125 (6.36)	189 (9.62)	189 (9.62)
45 – 59		197 (9.52)	225 (11.46)	225 (11.46)
60 and above		204 (10.39)	307 (15.63)	307 (15.63)
Total		865 (44.04)	1099 (55.96)	1099 (55.96)

Table 2
Prevalence of blindness and visual impairment

Category of Visual loss	No. of persons		Prevalence (%)	
	U	B	U	B
Blindness (VA<3/60)	28	24	1.43	1.22
Visual Impairment <6/18 but>3/60	13	41	0.66	2.09
Total	41	65	2.09	3.31

U = Unilateral; B = Bilateral

The prevalence of blindness was 1.22%, while the prevalence of visual impairment was 2.09%. The prevalence of blindness and visual impairment were found to be much higher in the elderly. Most bilateral blinds were 45 yrs of age and above. Table 3 shows the age and sex distribution of blindness and visual impairment.

Cataract was the main cause of blindness and visual impairment in this survey. It accounted for 37.5% of bilateral and 50% of unilateral blindness. Cataract was responsible for blindness in

individuals aged 45 yrs and above. These comprised 44.4% within the 45 – 59 years age group, while 55.5% were 60 years and above. Pterygium was a major cause of visual impairment accounting for 19.5% of bilateral and 23.08% of unilateral visual impairment. However only one (1) person (4.2%) was bilaterally blind from pterygium. which had encroached and crossed over the visual axes. 2 (7.1%) others were unilaterally blind from pterygium. Other causes of blindness found in this study are as shown in Table 4.

DISCUSSION

This population based survey revealed a blindness prevalence of 1.22 % in YEWA – North local government area of Ogun State. At the same time, it gives an estimate of the magnitude and causes of blindness in the local government area.

A prevalence of blindness of 1.22% found in this study is higher than the national average of 1.0% but is lower than the 1.92% recorded for Ikenne local government area of the same Ogun state (Ajibode, 1999). It is higher than the 0.5% W.H.O. (1987) estimates for southern Nigeria. The higher rate in this study may be partly due to the relatively

high representation of persons above the age 40 yrs. Also is the fact that the W.H.O. estimate was not mainly based on population – based surveys but partly on the assumption that health services are readily available in most parts of southern Nigeria.

Many authors (Zubair,1996; Abiose et. Al, 1996 and Adejor, 1993) had confirmed that the prevalence observed in this study lie within the figures recorded for their community-based studies carried out in Nigeria. Ajibode (1999) had observed in a cross sectional survey of Ikenne LGA in Ogun State of Nigeria, that the prevalence of blindness

Table 3
Age and sex distribution of blindness and visual impairment.

Age (yrs)	Blindness		Visual impairment	
	U (%)	B (%)	U (%)	B (%)
0-14	1 (0.20)	3 (0.61)	0 (0.00)	1 (0.20)
15-29	2 (0.85)	0 (0.00)	0 (0.00)	5 (2.12)
30-44	1 (0.32)	0 (0.00)	1 (0.32)	4 (1.27)
45-60	9 (2.18)	9 (2.18)	8 (1.94)	10(2.43)
> 60	15 (2.94)	12(2.35)	4 (0.78)	21 (4.11)
Total	28 (6.49)	24(5.14)	13 (3.04)	41(10.1)

U = Unilateral; B = Bilateral

Table 4:
Causes of blindness and visual Impairment

Causes	Blindness		Visual Impairment	
	U (%)	B (%)	U (%)	B (%)
Globe		2 (8.3)		
Cataract	14 (50.0)	9 (37.5)	6 (46.15)	15 (36.6)
Uncorrected aphakia		1 (4.2)		2 (4.9)
Central corneal opacity	5 (17.9)		1 (7.69)	
Pterygium	2 (7.1)	1 (4.2)	3 (23.08)	8 (19.5)
Glaucoma	4 (14.3)	5 (20.8)		5 (12.2)
Posterior segment (optic atrophy)	3 (10.7)	6 (25.0)	3 (23.08)	9 (22.0)
Refractive error				2 (4.9)
Total	28 (100.0)	24 (100.0)	13 (100.0)	41 (100.0)

U = Unilateral; B = Bilateral

and low vision were 1.92% and 4.81% respectively. Similar observation was also made by Oluyadi (1995) in his study

of Egbeda LGA of Oyo State, Nigeria where he noted a prevalence of 1.1% for blindness. Zubair (1996) in Asa LGA of

Kwara state also observed prevalence of 1.7% and 5.8% for blindness and low vision respectively. In Nnewi LGA of Anambra state, Ezepue (1984) had noted that the prevalence of blindness and low vision to be 2.0% and 3.3% respectively. In Garki district of Northern Nigeria, Budden estimated the prevalence of blindness to be 1.5% and for onchocerciasis endemic areas of Kaduna state, while Abiose (1989) obtained the prevalence of 1.8% for Kauru district of Saminaka local government of Kaduna state. Meanwhile Adejor (1993) in Otukpo LGA of Benue State estimated the prevalence to be 0.78%.

The prevalence of low vision of 2.08% is lower than that reported from other local government areas in Nigeria. For example Adejor (1993) in Otukpo, Benue state reported 4.81%. In Ikenne, Ajibode (1999) Ogun state noted 4.81% whilst in Nnewi, Anambra state Ezepue reported 6.8%. Our result is similar to that of Dambatta LGA of Kano state, where Lawal (1997) reported a prevalence of 2.05%.

However our result is higher than 1.4% prevalence reported from Gambia by Faal (1989). This is probably due to variation in magnitude and causes of low vision in the different parts of Nigeria and other parts of Africa.

The age distribution of blindness and visual impairment in this study showed that most of the blind were 45 yrs old and above. Blindness has been found to occur more commonly in certain age groups than in others. In Scotland, Vannas (1964) found the peak incidence (63%) of blindness in the 65- 85yrs age group. Also Chirambo (1986) in Malawi and Tabara (1986) in Saudi Arabia recorded the highest blindness prevalence in the people over 60 years. Similar findings were recorded by Forster (1989) in Tanzania, Bucher *et al* (1988) in South Africa, Whitfield *et al* (1990) in Kenya and Tielsh *et al* (1990) in America. These are largely age-related blinding conditions like senile cataract, glaucoma and macula degeneration, which are common in this age group

This increase in the prevalence of blindness and visual impairment amongst

the elderly in our environment is mainly due to the high rate of cataract formation and development of glaucoma at older age with substantial increase in the current rate of population growth.

Cataract was the most important cause of blindness and low vision. The study showed 37.5% bilateral blind for cataract and in additional 36.6% visually impaired. This is similar to findings in other parts of Nigeria Abiose (1982), Adejor (1993) and Ezepue (1984) and also in other parts of Africa - Faal *et al* (1989), Chirambo (1986) and Buscher *et al* (1988) and many parts of the developing world - Taraba *et al.* (1986), Singh *et al* (1988). Common causes of blindness in developed countries include senile macula degeneration, diabetic retinopathy, cataract, glaucoma and myopia were recorded by Vannas *et al* (1964) and Lindsted (1969). Whereas the major causes of blindness in developing countries include cataract, onchocerciasis, trachoma, keratitis (measles and xerophthalmia), leprosy, glaucoma and trauma as documented by various workers in Africa Faal (1989) Whitfield *et al* (1990) Kayembe (1985), including Nigeria. Abiose (1982). Olurin (1973) had documented the common causes of blindness as cataract 39%, chronic simple glaucoma 22%, Keratitis (non - trachomatous) 9.7%, optic atrophy 6.7%, uveitis 5.9%, trachoma 4.2% and trauma 2%. Adeoye (1993) in Osun state found cataract 41% as the chief cause of blindness. This has been corroborated by Ayanru (1974) in the Mid-western state of Nigeria. Our study confirmed that cataract blindness is indeed a problem and Akinsete (1993) estimated the cataract backlog in Nigeria as 600,000.

Optic atrophy was the second predominant cause of visual loss. Onchocerciasis was found to be the major cause of optic atrophy. This is similar to a population based study in mesoendemic onchocercal communities in Kaduna state by Abiose *et al* (1982) in which onchocerciasis was responsible for 39.2% of blindness.

Other important cause of blindness in the study was glaucoma. This is similar

to findings in other parts of Nigeria - Adejor (1993), Ajibode (1999), Lawal (1997). Among others causes of visual impairment was pterygium. The reason for the strikingly high prevalence of pterygium in the local government area requires further detailed study.

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