

PATTERN OF EYE DISEASES IN KADUNA STATE - A Rural Community Outreach Experience

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SUMMARY

Senile cataract and anterior segment eye infection were the two eye diseases most frequently seen in Giwa community. The lack of trachoma seems to indicate that the rural water supplies were relatively clean and safe. The majority of eye problems were age-related, and preventable.

Objective: The aim of the study was to establish the pattern of eye diseases presenting at the rural outreach eye clinic in Giwa, Kaduna State in northern Nigeria.

Methods: A total of 1,181 new patients were examined over a 27-month period in the Giwa rural outreach eye clinic. This was done after taking the patient's history and checking the visual acuity using a Snellen chart, a simple pen torch examination, and dilated funduscopy. Schiötz tonometry was done in suspected glaucoma cases.

Results: The results of this study showed that preventable and curable eye diseases were most common. Age-related ocular conditions, especially senile cataracts (22.9%), formed the main ocular morbidity in the outpatient eye clinic.

Anterior segment eye infection (19.1%) was observed with some frequency. However, trachoma eye infection (1.8%) was unexpectedly less common. This observation may indicate an improvement in rural sanitation and water supply.

Conclusion: Data analysis showed mostly preventable and curable eye diseases to be in the majority. These in most cases were age-related, i.e., occurring in older patients.

It is therefore recommended, that an integrated eye care programme that would target cataract backlog, glaucoma screening and other conditions with sufficient training and education of primary eye-care workers, school teachers, community extension workers and the

community at large would benefit the Giwa community.

Key words: outreach, eye diseases, pattern, rural community

INTRODUCTION

Many of the eye diseases found in the developing countries are preventable and curable, but there is a dearth of information about the extent and pattern of eye conditions seen in some areas, especially the rural eye clinics.

This is pertinent for future planning and strengthening of integrated primary eye care at the district level.

Developing African countries, such as Mali in the Segou¹ District, indicate that cataracts are the most common cause of visual loss (54%) among those over 50 years of age. This is followed by trauma (43%) with glaucoma and xerophthalmia next on the list.

In a rural adult population in East Africa,² four common eye diseases were identified in order of severity: presbyopia (48%), allergic conjunctivitis (20%), early cataracts (9%), and infective conjunctivitis (8%). The results of the study indicate that training health workers to recognize and treat these conditions would serve the greater majority of eye patients.

In South Africa's rural Lesotho,³ the examination of ophthalmic clinic patients showed that the most common ocular conditions encountered were bacterial conjunctivitis, refractive errors, vernal conjunctivitis, senile cataracts, glaucoma, corneal opacities and trauma, in that order. The educational impact of the survey and its importance to future planning were noted.

Along the west coast of Africa, in southern rural Togo,⁴ the main ocular diseases were cataracts, glaucoma and corneal opacities; cataracts being most

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common. A prevention strategy was therefore identified as needed and targeted towards these conditions.

In southern Nigeria, Nwosu⁵ found cataracts, glaucoma and macular degeneration to be common in patients who were bilaterally affected. Visual impairment was mainly caused by cataracts (33.2%), uncorrected refractive errors (19.5%), glaucoma (15.5%), and infective keratoconjunctivitis (7%). Conclusions drawn from this study were that a population-based blindness and visual impairment survey should be undertaken in this area, while preventive and curative measures should be instituted to tackle the leading causes of blindness and visual impairment in the sub-region.

A study of age-related eye diseases in the elderly members of a rural community in Ibadan, by Fafowora and Osuntokun,⁶ showed cataracts, age-related macular degeneration (ARMD) and glaucoma to be the main causes of blindness and low vision in the population. The study also demonstrated clearly that the prevalence of blindness increased with age.

In comparison, data from a developed nation on blindness and visual impairment in patients attending ophthalmology clinics at the Orleans Regional Hospital Centre, serving a semi-rural area in France,⁷ revealed that the leading causes of visual impairment to be macular degeneration (4%), diabetic retinopathy (16.6%), and cataracts (13.3%).

In this study, the authors intend to illustrate and compare the pattern and distribution of eye diseases in rural Kaduna with those in southern Nigeria and also those of developing and developed countries.

MATERIALS AND METHODS

A total of 1,181 consecutive new patients were seen and examined at the outreach clinic over a period of 27 months, from February 2000 to June 2002.

Examination was done after history taking and visual acuity testing using a Snellen's chart and a pen torch to examine the anterior segment.

Dilated funduscopy using an ophthalmoscope was done to view the posterior segment and fundus. A Schiötz's tonometer was used to assess intraocular pressure.

Clinical data was collected from patients at the outreach eye clinic, Giwa General Hospital, Giwa Local Government, Kaduna State in northern Nigeria.

RESULTS

The common ocular disorders observed in the 1,181 patients examined were, cataracts, conjunctivitis, glaucoma, refractive errors, foreign bodies, corneal opacities.

Table 1 below shows the ocular disorders and their distribution by age group in years.

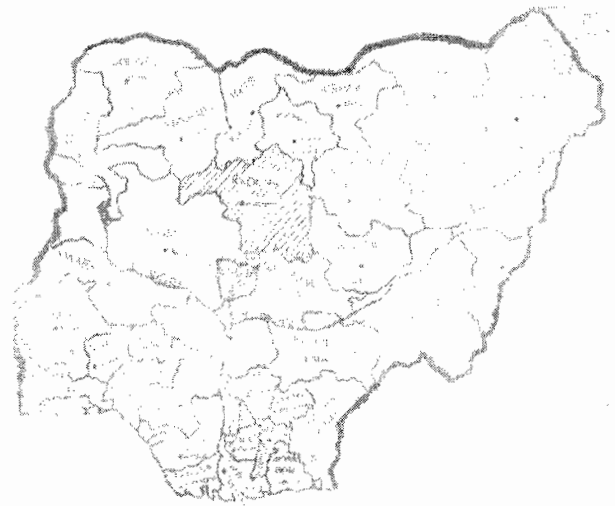


Figure 1. Map of Nigeria, highlighting Kaduna State



Figure 2. Map of Kaduna State showing local government areas (Giwa LGA highlighted)

DISCUSSION

The common ocular problems in 1,181 patients examined were curable and preventable, with the majority being cataracts, conjunctivitis, glaucoma, refractive errors, foreign bodies, corneal opacities, trauma, and pterygia. Other eye problems include: uveitis, trachoma, aphakia, retinitis pigmentosa, ophthalmia neonatorum, orbital cellulitis, corneal ulcers, optic neuropathy, pthisis bulbi, pinguecula, couching, xerophthalmia, chalazion, ectropion, lacrimal drainage obstruction, strabismus, herpes zoster, microphthalmos, panophthalmitis, ptosis, retinal detachment and scleritis.

Table 1. Distribution of diagnosis by age group

Diagnosis	Age groups in years and percentages of total number of patients					Total (%)
	0-17 (%)	18-35 (%)	36-53 (%)	54-71 (%)	72+8 (%)	
Cataract	29(9.8)	16(6.3)	92(35.0)	232(74.1)	38(69.1)	407(34.5)
Conjunctivitis	177(59.6)	121(47.8)	62(23.6)	18(5.8)	4(7.3)	382 (32.3)
Glaucoma	4(1.3)	15(5.9)	27(10.3)	21(6.7)	2(3.6)	69 (5.8)
Refractive error	6(2.0)	18(7.1)	20(7.6)	6(1.9)	- (0.0)	50 (4.2)
Pterygium	2(0.7)	15(5.9)	16 (6.1)	4(1.3)	- (0.0)	37 (3.1)
Foreign body	9(3.0)	18(7.1)	3(1.1)	1 (0.3)	- (0.0)	31 (2.6)
Corneal opacity	14(4.7)	5(2.0)	9(3.4)	2(0.6)	-(0.0)	30 (2.5)
Trauma	11(3.7)	10(4.0)	7(2.7)	1(0.3)	1 (1.8)	30(2.5)
Uveitis	9(3.0)	10(4.0)	3(1.1)	1(0.3)	1(1.8)	24(2.0)
Trachoma	4(1.3)	5(2.0)	6(3.3)	6(1.9)	-(0.0)	21(1.8)
Aphakia	-(0.0)	-(0.0)	2 (0.8)	7(2.2)	6(10.9)	15(1.3)
Retinitis pigmentosa	5(1.7)	6(2.4)	1(0.4)	3(1.0)	-(0.0)	15(1.3)
Ophthalmia neonatorum	10(3.4)	-(0.0)	-(0.0)	-(0.0)	-(0.0)	10(0.8)
Cellulitis	3(1.0)	4(1.6)	-(0.0)	2(6.6)	-(0.0)	9(0.8)
Corneal ulcer	2(0.7)	-(0.0)	6(2.3)	-(0.0)	1(1.8)	9(0.8)
Optic neuropathy	1(0.3)	1(0.4)	1(0.4)	2(0.6)	- (0.0)	5(0.4)
Ptosis bulbi	2(0.7)	2(0.8)	-(0.0)	1(0.3)	-(0.0)	5(0.4)
Pinguecula	-(0.0)	4(1.6)	1(0.4)	-(0.0)	-(0.0)	5(0.4)
Blindness	1(0.3)	-(0.0)	2(0.8)	1(0.6)	-(0.0)	4(0.3)
Couching	-(0.0)	-(0.0)	-(0.0)	3(1.0)	1(1.8)	4(0.3)
Xerophthalmia	3(1.0)	1(0.4)	1(0.0)	-(0.0)	-(0.0)	4(0.3)
Chalazion	-(0.0)	2(0.8)	1(0.4)	- (0.0)	-(0.0)	3(0.3)
Ectropion	- (0.0)	- (0.0)	- (0.0)	1(0.3)	1(1.8)	2(0.2)
Lacrimal drainage	2(0.7)	-(0.0)	-(0.0)	-(0.0)	- (0.0)	2(0.2)
Strabismus	1(0.3)	- (0.0)	1(0.4)	- (0.0)	- (0.0)	2(0.2)
Herpes zoster	-(0.0)	- (0.0)	1 (0.4)	- (0.0) -	- (0.0)	1(0.1)
Microphthalmos	1(0.3)	- (0.0)	(0.0) -	(0.0) -	(0.0)	1(0.1)
Panophthalmitis	- (0.0)	-(0.0)	1(0.4)	-(0.0)	- (0.0)	1(0.1)
Ptosis	- (0.0)	- (0.0)	- (0.0)	1(0.3)	- (0.0)	1(0.1)
Retinal detachment	- (0.0)	- (0.0)	1(0.4)	- (0.0)	- (0.0)	1(0.1)
Scleritis	1(0.3)	- (0.0)	- (0.0)	- (0.0)	- (0.0)	1(0.1)
Total	297(25.1)	253(21.4)	263(22.3)	313(26.5)	55(4.7)	1181 (100.0)

Note: Age by sex description was not found to be significant.

Table 2. Distribution of patients by age group and sex

Age group	Male (%)	Female (%)	Total (%)
0 - 17	188(27.1)	109(22.4)	297 (25.1)
18 - 35	131 (18.9)	122(25.1)	253 (21.4)
36 - 53	152 (21.9)	111(22.8)	263(22.3)
54 - 71	190(27.4)	123(25.3)	313(26.5)
= 72	33 (4.8)	22(4.5)	55(4.7)
Total	694 (58.8)	487 (41.2)	1181(100.0)

$\chi^2 = 8.91$ $df = 5$ p value = 0.11

Note: No significant difference between male and female within each age group - meaning females are as well represented as males.

Cataracts were more common in the 36-53 year and 54-71 year age groups, showing a tendency to present with an increase in age. It was also the most common eye disease presenting at Giwa LGA. In developing African countries, such as Mali, cataracts are the most common cause of visual loss.¹

Nwosu in Onitsha⁵ also reported cataracts as one of the leading presenting conditions in his study. While it has been concluded that curative measures should be addressed, especially the cataract backlog, the need to pay increasing attention to quality of cataract surgery and not just focus on quantities operated on has been of concern. There is a need to address the cataract backlog

issue, as well as the necessity not to compromise quality for quantity.

Glaucoma was also high on the list of eye diseases and was found more frequently in the 36-53 year age group (table 1). This may indicate that emphasis should be placed on patients presenting in this age group for glaucoma screening. Ashaye⁸ reported on the management of glaucoma in national programmes. This study should be taken into account in instituting an integrated eye care programme aimed at identifying patients with glaucoma and their subsequent management, as well as the training of community eye workers at the district level.

Refractive errors were common in the 36-53 year age group, with a high percentage of presbyopes as well as refractive errors for distance. This would suggest that the work of refractionists should be extended to rural eye care delivery.

From the authors' observation, most of the eye problems tend to increase with age, and visual difficulties become more apparent. This information is also of value in screening for the aforementioned eye conditions.

Conjunctivitis was also high on the list, with a greater percentage of allergic conjunctivitis in the 18-35 year age group, who, in this rural area are predominantly farmers and herdsman. A study should be undertaken to see if this condition is occupationally linked.

Vernal conjunctivitis was also more common in younger patients, from 0 to 17 years.

Foreign bodies in the eye would also appear to be occupationally linked to farm activities.

It is also interesting to note that there was only one case of herpes zoster ophthalmicus in the entire sample.

Comparatively, other studies done in northern Nigeria showed cataracts to be the most common eye disease causing blindness and low vision. Abdul⁹ (2002) in the Danbatta Local Government Area of Kano State in northern Nigeria found cataracts, corneal opacities, glaucoma and refractive errors to be the common causes of blindness, and the reasons for presentation at the eye clinic. An earlier study by Abiose¹⁰ (1982) in another LGA in Kaduna (an onchoendemic zone), found that the major causes of blindness and morbidity were onchocerciasis, cataract, trachoma and glaucoma.

In a study by Fafowora¹¹ (1996), in Ifedapo Local Government Area of Oyo State, the major causes of low vision and blindness were cataracts, followed by senile macular degeneration, glaucoma, non trachomatous corneal opacities and uncorrected refractive errors.

In yet another study of a rural area in southern Nigeria, Fafowora et al.¹² found age-related macular degeneration prevalent in the community.

Adeoye¹³ (1996) conducted a survey in the rural communities of southwestern Nigeria, in Ife North Local

government in Osun State, and found that cataract and its sequelae account for a higher number of eye diseases. This was followed by onchocerciasis, primary open angle glaucoma, corneal scarring, pthisis bulbi and optic atrophy. In Ikenne Local Government Area in Ogun State, age-related cataract and glaucoma were found to be the predominant causes of visual impairment.¹⁴

A similar study in southeastern Nigeria by Ezepe¹⁵ gave a familiar pattern of eye diseases. The predominant one being cataracts followed by glaucoma and then macular degeneration.

Further south, near Port Harcourt, in a rural oil-producing community, Tarilah¹⁶ found the pattern of eye diseases to be predominantly refractive errors, followed by cataracts, allergic conjunctivitis, pterygium and glaucoma.

These findings give credence to the fact that the pattern of eye diseases in rural Nigerian communities are mainly preventive and curative.

It is general knowledge that there is a lack of trained personnel to deal adequately with the magnitude of the problem in the local government areas. Efforts therefore should be made toward better eye care delivery in these areas.

RECOMMENDATIONS

These are targeted at eye care delivery in Giwa LGA.

1. Cataract screening and surgery to reduce cataract backlog using the community health workers (CHOs) and district health workers by educating them and involving them in primary eye care programmes. Indigenes of the local government area should also be involved in identification, counselling and directing prospective patients to the eye clinic.
2. Routine glaucoma screening for age groups who are predisposed to the condition on presentation at the eye clinic and in the community at large. Health workers may need to be trained to do this.
3. Refraction is recommended as part of the integrated eye care delivery system, even though it may not rate very high on the list. This may be explained by the fact that in a rural setting visual needs are not as high as in an urban population.
4. Sufficient eye health information/education and drug relief for allergic and vernal conjunctivitis should be available. Education of primary eye care workers and school teachers by way of workshops could go a long way in addressing the management of this condition in the environment.
5. The people in Giwa LGA need health education on how to seek first-aid and referral to primary eye care providers and community extension workers for trauma cases, which could be linked to certain

occupations such as farming in age groups 0-17 years and 18-35 years.

CONCLUSION

From the data collected and analysed, it has been seen that the majority of eye cases were preventable and curable. Most of these cases were age-related.

An integrated eye programme that would target cataract backlog, glaucoma screening and other conditions with sufficient training and education of primary eye care workers, school teachers, community extension workers and other members of the community would be of benefit to the community at large.

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