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## Childhood eye diseases in Ibadan

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### Summary

Eye diseases in 1028 children below 15 years of age, seen at the Eye clinic of the University College Hospital, Ibadan, Nigeria were studied. Refractive error, vernal conjunctivitis, measles keratitis associated with malnutrition and those referable to injuries were leading causes of eye problems amongst children. Diseases of ocular adnexa (excluding orbital cellulitis) squints, glaucoma, uveitis and trachoma were rare.

### Résumé

Des études faites au centre Ophthalmologique du centre, Hospitalier Universitaire d'Ibadan, au Nigeria. Ont revele 1028 cas de maladies des yeux chez des enfants agés de moins de 15 ans. Les causes majeurs de ces maladies sont souvent dus a des erreurs refractives, à des cas très compliqués de la noucjeole, et à la malnutrition. Les maladies oculaires adnexa (cellulite orbital non compus) le strabisme, le glaucoma irites, et le trachome sont rares.

### Introduction

Most of the previous studies on eye diseases in Nigerian children have been on specific topics e.g. blindness, uveitis, vernal conjunctivitis and measles. Only few papers have dealt with the subject of ocular morbidity in general in Nigerian children. Such studies involving smaller groups of children were carried out some years ago in Lagos[1] and Kaduna[2] which are in different geographical locations in Nigeria.

No information is available as regards the pattern of eye diseases in Nigerian children in Ibadan, the largest indigenous black city in Africa. Such information is desirable and relevant in the teaching, planning, prevention and treatment of eye diseases before resulting in unnecessary blindness. Foreign doctors coming to the tropics for the first time should have an idea of the type of eye diseases they are likely to encounter in children, who constitute a relatively large proportion of our population[3].

### Materials and methods

All the children below the age of 15 years who attended the Eye clinic of the University College Hospital Ibadan from January 1984 to September 1986 for one eye problem or the other were included in the study. Of these, 313 were seen and examined by the author and studied into greater detail with a view to getting more relevant information.

Data analysed for each patient included various epidemiologic parameters like age, sex, visual acuity and other clinical features. Children's social classes were derived from fathers monthly income in cases of salary earners while in non salary earners, income was estimated from type of fathers occupation.

Assessment consisted of pen torch examination, slit lamp biomicroscopy, funduscopy and/or other forms of examination where more relevant information deemed necessary could be obtained. Laboratory investigations were done to confirm diagnosis where facilities for such studies were available. Most of the children were followed up for at least 12 months after registration.

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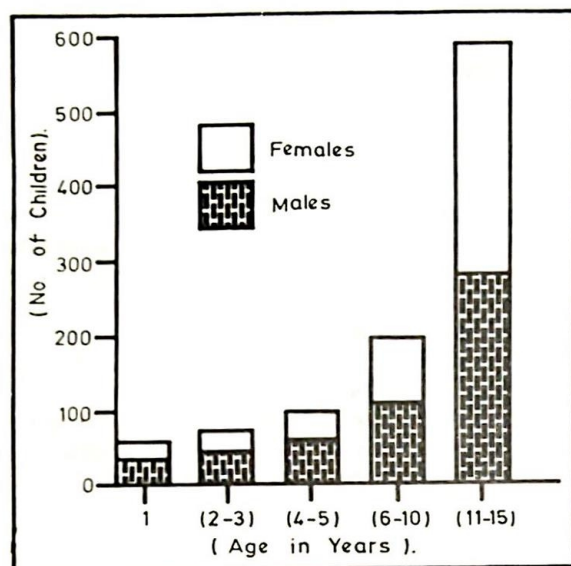


Fig. 1: Age and sex distribution of 1028 ophthalmic outpatient children

## Results

Fig. 1 shows the age and sex distribution of 1028 children presenting with eye diseases. 521 were males while 507 were females. 56.9% of the children were aged between 11 and 15 years, and were attending post primary institutions.

Table 1 shows the causes of eye diseases in these children. Refractive error constituted the commonest (25.7%) ophthalmic problem amongst children especially those in the 11-15 years age bracket when it was responsible for 87% of cases. Common causes of eye diseases included vernal conjunctivitis (25.3%), injuries (13.3%), keratitis due to measles associated with malnutrition (12.5%), congenital defects (6.6%) and infections (6.1%).

Amongst the children diagnosed to have measles keratitis, 75.6% were clinically malnourished, 22.8% admitted to previous attacks of measles, whilst 22.8% had no immunisation at all. 13.3% of children presenting with injuries. About 30% of children presenting with injuries were blind in affected eyes. Injuries occurred more frequently in boys.

Table 1: Causes of eye diseases in 1028 children

	Male	Female	Total	%
1. Refractive error	93	172	265	25.7
2. Allergic conjunctivitis	148	112	260	25.3
3. Injuries	87	50	137	13.3
4. Corneal inflammation	63	65	128	12.5
5. Congenital diseases	41	27	68	6.6
6. Infections	36	27	63	6.1
7. Visual pathway/ Cortical blindness	19	8	27	2.6
8. Neoplasia	7	8	15	1.5
9. Degenerative	4	2	6	0.6
10. Nutritional	2	1	3	0.3
11. Malingering	4	9	13	1.3
12. Unknown/Others	17	26	43	4.2
<b>Total</b>	<b>521</b>	<b>507</b>	<b>1028</b>	<b>100</b>

Table 2: Diagnoses by tissue affected in eyes of 1028 children

	Male	Female	Total	%
1. Conjunctivitis	170	141	311	30.3
2. Keratitis	77	65	142	13.8
3. Cataract	54	29	83	8.1
4. Lid abnormality	20	24	44	4.3
5. Anterior chamber (Hyphema)	28	9	37	3.6
6. Optic nerve disease	20	14	34	3.3
7. Squint	15	12	27	2.6
8. Uveitis	10	5	15	1.4
9. Orbital lesion	6	8	14	1.4
10. Retinoblastoma	4	4	8	0.7
11. Glaucoma	2	1	3	0.3
12. Others	29	23	52	5.1
13. None/Unknown	86	172	258	25.1
Total	521	507	1028	100

Table 2 shows the causes of ocular morbidity in children, when classified according to tissue of the eye involved in pathology. Conjunctivitis (30.3%), keratitis (13.3%) and cataract (8.1%) were common in that order. Diseases of ocular adnexa, glaucoma and orbito-ocular malignancies were infrequently encountered in children.

### Discussion

Refractive error was the commonest ophthalmic problem seen amongst children in this study. The same observation was made by Majekodunmi[1] in Lagos, whereas refractive error is not a common problem amongst children seen by Abiose[2] at the Ophthalmic Unit of the Guinness Eye Hospital in Kaduna. However in a report of a survey on ocular health status of post-primary school children in the same environment[4] refractive error was common. The disparity could be attributed to the attitude of the community towards hospital attendance. The male-female ratio of 1:2 observed in children with

refractive errors in this study could be due to the fact that this group of girls are more attracted to wearing spectacles for cosmetic rather than for optical reasons. This is further supported, since more girls were found to be malingering. The phenomenon have been noted by other authors[2,5].

Allergic conjunctivitis was also frequently encountered in children in both primary and secondary schools where diagnosis was usually obvious. History of itching and brownish discoloration in the presence of tarsal and/or limbal papillae was a common presentation. These clinical features in Nigerian children in Lagos have been described[6]. Seasonal variations could not be defined within the period of this study, but other workers in this environment[7] found that the harmattan brought a lot of exacerbation especially when dust raising, rampant during this season, prevails. The tarsal disease alone was observed to be more frequent than the mixed (tarsal and limbal) type of the disease. It is therefore imperative that the tarsal

conjunctival should be examined in all cases of vernal conjunctivitis. Some children who complained of photophobia had considerable tarsal disease. Majority of the children denied history of atopic condition like asthma, hay fever or eczema. These findings are similar to what other authors observed in Lagos and Kaduna[8] where it is the commonest reason for paediatric consultation. Although not usually a cause of blindness, vernal conjunctivitis, because of its chronic and recurrent nature is a leading cause of absenteeism from school, and hence educational backwardness. The psychological impact on both children and parents is considerable. The present standard treatment, which consists of using topical antihistamine preparation e.g. Di-sodium cromoglycate (Opticrom) and topical corticosteroids, is unsatisfactory. Many factors including cost, availability, efficacy and compliance along with dangers inherent in prolonged topical steroid therapy may be responsible. Newer drugs e.g. Hismanal (Astemizole) with a single oral daily dose appear promising but still need to be carefully evaluated, whilst more studies are still required for better understanding and treatment of this disease. Abiose and Merz[9] showed that cryotherapy is effective for the disease, corneal disease, mostly inflammations and its sequelae were the second most frequently encountered ocular problem after that of the conjunctiva (Table 2). Most of the cases involving the two eyes arose as complications of measles. Diagnosis was made on purely clinical grounds as no laboratory facilities were available for viral studies. Measles is a well recognised clinical disease which is usually worsened by malnutrition, vitamin deficiencies and generalised infection. Children with measles especially below 3 years of age constituted a high risk population. They presented with xerophthalmic, diarrhoea and chest infections. However, none of the children was seen with isolated features of xerophthalmia. Measles has been recognised to be a leading cause of blindness in Northern Nigeria[14], Ibadan[10,11], Lagos[12], Enugu[13], and other parts of tropical Africa[15] where ignorance, poverty and malnutrition still thrive. Its epidemiology and control have been studied for many years[16] till now. Therefore it is still surprising that in children diagnosed to have measles keratitis, majority (75.6%) were clinically malnourished, whilst 22.8% admitted to previous attack of measles and 22.2% of these children had no form of immunisation at all.

Injuries which occurred more frequently in boys is understandable as boys engage more in dangerous outdoor activities, predisposing them to accidents hence injuries to their eyes. Most of the children who were blinded from injuries were those who sustained very severe injuries and were late in presenting in hospitals. Injury as a leading cause of unocular blindness has been reported by other authors in Ibadan[17,18], Lagos[19] and Kaduna[2].

Other conditions encountered in children included infections, cataract, congenital glaucoma and uveitis from ocular toxoplasmosis and optic atrophy. Ayanru[20] in Benin screened 1,5000 children at school, aged 9-15 years for defective vision and documented the occurrence of tropical amblyopia syndrome, a condition which was found to be very rare in this study. He attributed the cause to be of nutritional origin with a possible dietary toxin present in the staple food consumed in that community.

No case of trachoma was also encountered in this study, whereas this condition is highly prevalent in northern part of Nigeria, as has already been documented[21].

Retinoblastoma was the only childhood ocular malignancy encountered during the study period. This tumour is a well known childhood malignancy in Ibadan[22], Lagos[23] and Kaduna[24]. As was the experience in this study, the late presentation spells doom for an otherwise curable malignancy.

## Conclusion

Refractive errors, vernal conjunctivitis, measles keratitis associated with malnutrition and injuries are leading causes of eye problems in Nigerian children in Ibadan. Diseases of ocular adnexa, glaucoma, uveitis, squints and trachoma are rare. Retinoblastoma is still a common childhood ocular malignancy.

Many of the common eye conditions in children are causes of educational backwardness, visual impairment and blindness. Majority of these conditions are highly preventable and treatable if there was more awareness and attention given to these eyes in the early stages of these diseases.

Many of the affected children with measles and malnutrition have not had immunisation. Educating parents on the need for good nutrition and mass immunisation will reduce the incidence of ocular morbidity and blindness. School teachers should be

involved in the screening of children for ocular defects with periodic eye tests as part of school Health Curriculum, which should be adopted by the ministries of education.

Training of health auxiliaries for primary eye care is important at this stage, as part of the National Health policy. This will enhance primary eye care at the grassroot level by screening, diagnosis and treatment of eye conditions before they assume bigger dimensions.

A different orientation is required of everybody concerned with the care of children to facilitate early detection, treatment and prevention of blinding eye diseases in children. More studies are however required to look into greater details, certain aspects of childhood eye diseases.

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