

Childhood Blindness

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Summary

Ajaiyeoba AI. **Childhood Blindness.** *Nigerian Journal of Paediatrics* 1994; 21: 43. The results of a retrospective study of 119 children who attended the Eye Clinic, University College Hospital, Ibadan, with various eye complaints leading to blindness in one or both eyes are presented. The leading causes of blindness in the present series included eye injuries which accounted for 33.6 percent, measles/keratitis associated with malnutrition in 28.6 percent, cataract in 6.7 percent and ocular infections in 6.7 percent of the cases. Despite several past recommendations, including preventive and control measures on the condition, childhood blindness in Ibadan is as common now as it was some 25 years ago. In the present study, most of the causes of the blindness were preventable just as they were earlier reported from this same institution.

Introduction

BLINDNESS in children has been the subject of many studies in different parts of the world.^{1,2} For instance, a previous study on the aetiology of blindness in Nigerian children that was undertaken in 1970, at the University College Hospital (UCH), Ibadan, recommended a number of preventive and control measures on the disease.³ Despite several important changes in the health-care delivery system in the country, our clinical impression at the UCH, about 23 years after the above study, was that there did not seem to have been any appreciable impact of those preventive and control measures on childhood blindness in

Ibadan. Therefore, in order to confirm or disprove the above impression, the present retrospective study was undertaken.

Patients and Methods

Patients were all children, with various eye problems, who attended the Eye Clinic, UCH, Ibadan, between January 1984 and September 1986, a period of 33 months. Clinical examination of each patient consisted of detailed ophthalmic assessment including visual acuity, using various charts, such as conventional Snellen, Snellen's 'E' and pictorial charts. In neonates and infants, where accurate visual acuity assessment may be difficult, only rough estimates of visual acuity status were possible. This was done by assessing the ability of a neonate or infant to follow light, or brightly coloured objects or toys

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at varying distances. These distances were noted and used to calculate rough estimates of visual acuity. Pen-torch examination, slit lamp biomicroscopy, tonometry, funduscopy and other forms of examination were also conducted as and when indicated. Investigations carried out, as and when indicated included, full blood count, radiograph of skull and/or orbit, Mantoux or Heaf test, serological tests, microscopy, culture, and sensitivity of conjunctival swabs or corneal scrapings as well as histological examination of orbito-ocular specimens. Viral studies were not performed for lack of necessary facilities.

Appropriate treatment, including surgical procedures was instituted either on out- or in-patient basis. In-patients were followed up, in the out-patient clinic for at least, six months, or for three consecutive visits. The best corrected visual acuity in affected eye(s) was recorded when complete resolution was thought to have taken place. Blindness in the present study is as defined by the World Health Organisation;⁴ the best corrected visual acuity of less than 'Count Fingers' at a distance of three metres in affected eyes. In babies, inability to follow light or brightly coloured object at a distance of less than one metre was used as cut-off point.

Results

During the 33-month period of the present study, 1028 children were seen with various eye complaints and of these, 119 (11.6 percent) were blind in one or both eyes. Of the 34 children who presented with measles and/or malnutrition, blindness was binocular in nine (26.5 percent) and unioocular in 25 (73.5 percent) of the cases, with or without varying degrees of ocular involvement in the other eye. Injury to the eye was the commonest cause of blindness, being responsible for 40 (33.6 percent) of the 119 cases (Table 1).

TABLE 1

Causes of blindness in 119 patients

Cause	Sex		Total No of Patients	Percent of Total
	Male	Female		
Injury	24	16	40	33.6
Measles keratitis/ Malnutrition	19	15	34	28.6
Optic atrophy	5	3	8	6.7
Cataract	5	3	8	6.7
Infection	5	3	8	6.7
Cerebral anoxia	3	3	6	5.0
Uveitis	3	2	5	4.2
Retinoblastoma	2	2	4	3.4
Congenital glau- coma	1	1	2	1.7
Unknown	2	2	4	3.4
Total	69	50	119	100.0

Measles keratitis, associated with malnutrition, was the next common cause in 34 (28.6 percent) patients; 26 (76.5 percent) of these 34 children with measles were malnourished and seven (21.0 percent) claimed not to have been previously immunized against measles. Thus, the number of previously immunized patients was 27 (79.4 percent) of the 34 cases of measles. Optic atrophy and cataract were the next common causes of blindness, being responsible for 6.7 percent each of the conditions. There were eight cases (6.7 percent) of systemic infection (malaria infection with febrile seizures in six patients and pneumonia in two others) that caused blindness in the series. Congenital glaucoma, uveitis and retinoblastoma were lesser causes of blindness. Table II lists the various ocular injuries that caused blindness in the 40 patients (24 males and 16 females) in the series. As can be observed, cutlasses and knives were the leading causes of the injuries, being 10 (25 percent) of the 40 cases; these were followed by canes and

whips in eight (20 percent) and by broken bottles in five (12.5 percent) of the cases. Majority of these cases of injuries were sustained accidentally either at play or at work.

TABLE II
Causes of Unilateral Blindness due to
Ocular Injury

Cause	Sex		Total No of Patients	Percent of total
	Male	Female		
Cutlass /knife	7	3	10	25.0
Cane and whip	6	2	8	20.0
Broken bottles	2	3	5	12.5
Broomstick	2	2	4	10.0
Fist	2	0	2	5.0
Stones	2	0	2	5.0
Falls	1	1	2	5.0
Door handle	1	1	2	5.0
Ball	1	0	1	2.5
Pen, nib	0	1	1	2.5
Rope, catapult	0	1	1	2.5
Road traffic	0	1	1	2.5
Twigs, wood	0	1	1	2.5
Total	24	16	40	100.0

Ocular infections (Table III) led to blindness in eight (6.7 percent) of the 119 patients and the leading infection was purulent conjunctivitis which occurred in three (37.3 percent) of the eight patients. Other infections included one each (12.5 percent) of corneal abscess, orbital abscess, endophthalmitis, ophthalmia neonatorum and dacryocystitis.

TABLE III
Ocular Infections causing Blindness
in eight Patients

Infection	Sex		Total No of Patients	Percent of total
	Male	Female		
Conjunctivitis	2	1	3	37.5
Corneal abscess	1	0	1	12.5
Orbital abscess	0	1	1	12.5
Endophthalmitis	1	0	1	12.5
Ophthalmia Neonatorum	0	1	1	12.5
Dacryocystitis	0	1	1	12.5
Total	4	4	8	100.0

Discussion

The results of the present study clearly indicate that blindness is as common in Ibadan children now as it was some 23 years ago.³ The study also confirms that the impact of those preventive and control measures on childhood blindness in Ibadan recommended earlier by Olurin³ from the same department, is yet to be felt. The common causes of blindness in children in this series namely: injuries, measles-keratitis, optic atrophy, cataract, infections etc were similar to those reported by Olurin,³ over two decades ago. In that earlier series by Olurin,³ measles-keratitis and injuries were the leading causes of blindness. Injuries to eyes, were well known causes of blindness world-wide. In the present study, injuries were often due to accidental insults to the eyes of children at home or at school, while playing or at work. Injuries were also sustained from accidental falls in recreational centres and amusement parks. In very few cases, the injury

was inflicted by the school teacher, or a parent while trying to punish the child, using a cane or a whip. In the present study, the blindness resulting from injury was inevitable as most of these patients presented late at the hospital. This delay in seeking medical care after an injury to the eye has been commented on by other workers⁵

With 28.6 percent of the total cases of blindness, measles-keratitis was the second of the two leading causes. This finding is similar to those reported by others.³⁻⁶ It is noteworthy that 79.4 percent of previously immunized patients in the present series developed measles, a phenomenon which has been reported by others.⁷ Since a majority of these children with measles were also malnourished, it is likely that their immune status must have been altered despite the immunization. The role of malnutrition alone⁸ and as a socio-economic factor⁹ in the causation of corneal blindness from measles is well known. Therefore, blindness will regrettably continue to be a common and serious childhood problem unless our socio-economic problems are solved. Abdurrahman and Taqi,¹⁰ have suggested that our harsh, tropical climate and inadequate storage facilities at health institutions might have rendered the vaccines that were used in immunization programmes impotent, thus enabling a second attack of measles in these previously immunized patients. Further studies on this possibility seem desirable. While re-emphasizing the preventive and control measures earlier recommended by Olurin,³ we would like to add few more measures to be undertaken in order to control/prevent childhood blindness. These measures include strict supervision of children at play in school as well as at home; brutal beating of children must be stopped and prompt referral to the ophthalmologist of children with injury to

the eye.

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Page 8, name of the second author is spelt Yakubu and not Yakuba.

Page 13, paragraph two line one, insert "intradermal" between "an" and "injection".