



ISSN: 2476-8642 (Print)

ISSN: 2536-6149 (Online)

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Annals of HEALTH RESEARCH

(The Journal of the Medical and Dental Consultants' Association of Nigeria, OOUTH, Sagamu, Nigeria)

Volume 11 | No. 1 | Jan - Mar., 2025



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**PUBLISHED BY THE MEDICAL
AND DENTAL CONSULTANTS ASSOCIATION
OF NIGERIA, OOUTH, SAGAMU, NIGERIA.**

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Annals of Health Research

(The Journal of the Medical and Dental Consultants Association of Nigeria, OOUTH, Sagamu, Nigeria)
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Volume 11, Issue 1: 1-6
March 2025
doi:10.30442/ahr.1101-01-265

ORIGINAL RESEARCH

Childhood Cataract in a Suburban Tertiary Institution in Southwest Nigeria

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Citation: Bodunde OT, Otulana TO, Fakolujo VO, Olagbenro AS. Childhood Cataract in a Suburban Tertiary Institution in Southwest Nigeria. Ann Health Res 2025;11:1-6. <https://doi.org/10.30442/ahr.1101-01-265>.

Abstract

Background: Childhood cataracts, now replacing corneal diseases in Africa, including Nigeria, are a major cause of childhood blindness.

Objectives: To describe the pattern of presentation of childhood cataracts at the Olabisi Onabanjo University Teaching Hospital (OOUTH), a tertiary hospital in a suburban city in Southwest Nigeria

Methods: In a retrospective study, the case notes of all patients aged under 18 years presenting to the Eye Clinic of OOUTH over five years were retrieved and analysed.

Results: Of the 7311 paediatric eye cases seen during the study period, thirty-five (35) were childhood cataracts, giving a prevalence of 0.5%. Their mean age was 9.88 ± 4.59 years. The most common presenting complaint was poor vision, seen in 14 (40%) of participants. Traumatic cataracts accounted for 20 (57.1%), while only 11 (31.4%) took up treatment.

Conclusion: Traumatic cataract is the most common childhood cataract presenting to our centre, and there is poor surgical uptake, with more than three-quarters lost to follow-up. Regular eye screening of children, intensive health education, and promotion of subsidised eye treatment for children by all tiers of government will go a long way in improving early detection and uptake of treatment.

Keywords: Childhood blindness, Childhood cataract, Congenital cataract, Traumatic cataract.

Introduction

Childhood cataracts are one of the leading causes of childhood blindness globally, and it is preventable.^[1] It is responsible for 5-20% of blindness in children worldwide.^[2] Although

blindness from childhood cataracts is less common than among adults, the impact is severe regarding vision years lost.^[3] African population-based surveys (mostly using key informants) suggest that 15 – 35% of childhood blindness is due to congenital or developmental cataracts.^[4] It

is fast replacing corneal causes like measles and Vitamin A deficiency, previously the major cause of childhood blindness in Africa.^[5] The prevalence of childhood cataracts is higher in developing countries due to low standard of living.^[6] In Nigeria, 15% of the primary cause of severe visual impairment among children is caused by cataracts.^[7] Cataracts have been known to reduce children's quality adjusted life years.^[6]

Childhood cataracts can be classified into non-traumatic and traumatic. The majority of the non-traumatic cataracts are idiopathic in origin.^[1] Other causes of non-traumatic paediatric cataracts are congenital, of which the most common is familial, which is inherited as an autosomal dominant disorder, and intrauterine infections like Rubella, diabetes mellitus and galactosaemia.^[1,3] It can also be secondary to primary ocular disorders like uveitis.^[5] Paediatric cataracts can also be classified as unilateral or bilateral. Unilateral congenital cataract is an essential cause of amblyopia and strabismus.^[8]

The common symptoms or complaints of parents/ guardians include whitish specks in the eye, poor vision, strabismus, and red eyes. The present strategy for the prevention of blindness from cataracts is early detection and treatment. The mainstay of management is surgery. Cataract surgery in children is not as simple as that in adults as early intervention is critical; the procedure is done under general anaesthesia, and it is a more technically challenging procedure with the need for an anterior vitrectomy machine, which is expensive.^[8,9] Furthermore, the surgery itself is just the beginning of management, as follow-up of such children is for life. Although several reports on cataracts in children have been made, none emanated from our centre. Hence, we conducted a five-year audit of our patients to see the pattern of presentation and uptake of treatment of childhood cataracts.

Methods

All case records of children aged less than 18 years who presented with cataracts to the Eye Clinic in Olabisi Onabanjo University Teaching Hospital, Sagamu, between September 2017 and August 2023, were retrieved from the hospital's Records Department. Their identifiers were initially copied from the clinic register. Information on demographics, age of presentation, pregnancy and birth history, history of trauma and clinical findings were retrieved from the hospital records.

Lens opacity found within 2 months of birth was classified as congenital, while those seen in infants and early childhood were classified as developmental.

Data analysis

The data was analysed using SPSS version 23, and the variables were summarised with descriptive statistics, including frequencies and means. The Chi-square test was used to determine the associations between categorical variables, and the level of significance was set at a *P* value less than 0.05.

Ethical approval

This was obtained from the Health Research Ethics Committee of Olabisi Onabanjo University Teaching Hospital (HREC-OOUTH) with a certificate number OOUTH/HREC/717/2023AP. During the conduct of the study, the protocol adhered strictly to the tenets of the Declaration of Helsinki.

Results

A total of 7311 children attended the Eye Clinic during the period of study, constituting 18% of the total population seen in the eye clinic. Thirty-five children presented with cataracts, giving a prevalence of 0.5%. These comprised 22 (62.9%)

males and 13 (37.1%) females (Table I). Their age ranged from 4 months to 18 years, with a mean of 9.88 ± 4.59 years and modal age of 13 years.

Table I: Demographic characteristics and laterality of childhood cataract

Variable	Frequency	Percentage
Age range (year)		
0-5	7	20
6-10	12	34.3
11-15	12	34.3
16 -18	4	11.4
Sex		
Male	22	62.9
Female	13	37.1
Laterality		
Unilateral	25	71.4
Bilateral	10	28.6
Positive Family History		
Yes	2	5.7
No	33	94.3

The most common presenting complaint was a poor vision, recorded in 14 (40%) children, followed by white speck in 10 children (28.6%) and 8 (22.9%) presented with ocular injury. Twenty-five (71.4%) presented within one year of the onset of symptoms, while only 6 presented within one month (Table II).

Table II: Presenting complaints and duration of symptoms before presentation

Presenting complaint	Frequency	Percentage
Poor vision	14	40.0
White speck	10	28.6
Trauma	8	22.9
Deviating eye	1	2.8
Red eye	1	2.8
Frequent Blinking	1	2.8
Duration (years)		
0-1	25	71.4
2-5	5	14.3
6-10	3	8.6
11-15	1	2.8
15	1	2.8

A positive family history was recorded in two (5.7%) children, while further questioning elicited a history of trauma in 20 (57.1%). The majority of the trauma was caused by a cane/stick (55.6%). Also, the injuries occurred while the children were being reprimanded, during play, at work or during the assault (in order of frequency), as found in the eight cases in which the circumstances of trauma were recorded (Table III).

Table III: Characteristics of traumatic cataract cases

Circumstance of Trauma	Frequency	Percentage
Corporal punishment	3	37.5
Play	3	37.5
Workplace	1	12.5
Assault	1	12.5

One eye (Unilateral) presentation was more commonly affected, as found in 25 (71.4%); the left eye was more frequently involved in 14 (40%) of participants, while both eyes were involved in 10 (28.6%).

Only laterality had a statistically significant association with age in the age group 10-15 years ($p = 0.028$). Traumatic cataract was the most common type of cataract seen in 20 (57.1%) children followed by developmental cataract in 7 (20%) of participants, congenital type in 5 (14.3%) and post-uveitic in 3 (8.6%).

Only 11 (31.4%) children had surgery. Of the 24 (68.6%) who did not undergo surgery, 18 (85.7%) defaulted from follow-up care, while 6 (28.6%) were referred on account of the non-availability of the anterior vitrectomy machine.

Discussion

The prevalence of childhood cataracts is 0.5% in this study, which is lower than the 4.25% recorded in Ghana. [8] This may be due to the difference in sample size, as the Ghanaian study had a larger sample than the current research. There was male preponderance, as reported by

other researchers^[1, 5,10, 11,12] though without a statistically significant association. The mean age in the present study of 9.88 ± 4.59 years was higher than reported in other studies, probably because of the small sample size and because traumatic cataracts were the most common in this cohort; this tends to occur more commonly in older children.^[5,8] Studies on congenital and developmental cataracts alone reported a lower mean age^[12] while those on traumatic cataracts reported a higher mean age.^[14] The mean age in the present study is comparable to the cases of traumatic cataracts reported by Ademola-Popoola *et al.*^[14] This may be related to the fact that traumatic cataract was the most preponderant type in the present study. Additionally, our centre does not have the facility for anterior vitrectomy, which is necessary for cataract surgery in children below eight years old. Hence, those presenting to us were referred to other centres with this facility. Patients are also likely to inform each other about their experiences and the available facilities in the centres they are attending.

The most common presenting complaint in this study was poor vision, which is different from the report of the researcher in Lagos, where a whitish speck in the eye was the most common complaint.^[6] The difference is probably due to our smaller sample size and also that our cohort contains more cases of traumatic cataracts. As in other studies, we also found that the majority of the trauma occurred during play and corporal punishment at school and home by parents, teachers and other caregivers, with the agent of injury mostly being a cane /stick.^[14 - 17] Trauma is known to be a significant cause of monocular cataracts.^[14] This calls for better supervision of children while playing and the need to devise other punitive measures apart from flogging, such as corporal punishment, when a child is deemed to have misbehaved. Parents/ guardians and teachers should be educated that rather than flog a child on the outstretched hand(s) during

corporal punishment, they should use the buttocks, legs or back.

Most of the children presented later than one month after the onset of symptoms, but only six presented within one month of noticing the symptom. This is similar to previous reports by other researchers who have reported late presentations.^[10,11, 18, 19] This research could not identify The possible causes of late presentation because of its retrospective nature. Those who presented early were traumatic cases, as this was associated with red eye and pain. The children with developmental and congenital cataracts were found to present mostly with bilateral cataracts, and they presented well over eight years; only one presented at the age of four months, which is even late as the effective outcome of cataract surgery depends on timely removal and appropriate rehabilitation.^[19] It was found that most cases of unilateral traumatic cataracts presented early, possibly due to associated inflammatory symptoms (as previously documented) like redness, pain, photophobia and poor/loss of vision. These could be scary for the parents and caregivers, prompting an earlier presentation.^[5] A planned prospective study is advocated on this observation.

Rigorous health education and awareness creation by communities and mothers on the need for early presentation, diagnosis and treatment of eye diseases in children should be embarked upon by all eye care workers, especially paediatric ophthalmologists. Routine eye screening of children will also help in the early detection of cataracts among children.

The primary treatment of paediatric cataracts is surgery. There was poor uptake of surgery in this centre, similar to other studies.^[7, 20] This is probably due to the cost of surgery which is higher than adult cataract surgery because children require general anaesthesia, cultural

myths about surgery, and the preference for alternative medicine. Peculiar to our centre is the lack of an anterior vitrectomy machine. Another factor affecting the uptake of cataract surgery in children is the rescheduling of surgery, usually due to financial issues and industrial action, as reported by other researchers.^[12,20]

Conclusion

A traumatic cataract is the most common childhood cataract in this centre, and there is poor surgical uptake, with more than three-quarters being lost to follow-up. Regular eye screening of children, intensive health education and promotion with subsidised eye treatment for children at all levels of government will go a long way in addressing this.

Acknowledgement: The authors acknowledge Dr Victor Ayeni for his contributions to the manuscript.

Authors' Contributions: BOT conceived and designed the research. BOT, OOT, FVO and OAS participated in data collection, data analysis and interpretation. BOT drafted the manuscript while OOT, FVO and OAS revised it for sound intellectual content. All the authors approved the final version of the manuscript.

Conflicts of Interest: None.

Funding: Self-funded.

Publication History: Submitted 23 December 2024;

Accepted 22 March 2025.

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