



Prevalence and Pattern of Ocular Disorders in Children Visiting Tertiary Healthcare Centre

¹Dr Mamta Dalwani, ²Dr Priti Kapadia

¹PG Scholar, Dept. of Ophthalmology, Government Medical College, Surat, Veer Narmad South Gujarat University, Gujarat, India

²HOD, Department of Ophthalmology, Government Medical College, Surat, Veer Narmad South Gujarat University, Gujarat, India

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Corresponding Author: Dr Mamta Dalwani, PG Scholar, Dept. of Ophthalmology, Government Medical College, Surat, Veer Narmad South Gujarat University, Gujarat, India

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Abstract

Objectives

To assess the prevalence and pattern of ocular disorders in children visiting a tertiary healthcare centre.

Methods

An observational cross-sectional study was conducted over 12 months, involving 573 children under 18 years of age attending the ophthalmology outpatient department. Ocular conditions were classified based on anatomical sites, and detailed histories, visual acuity tests, and ophthalmic evaluations were performed.

Results

The most prevalent disorders were refractive errors (17%), followed by retinopathy of prematurity (ROP)

(15%) and conjunctival disorders (14.1%). Refractive errors were most commonly diagnosed in children aged 11-15 years (8.7%), while Retinopathy of Prematurity was most frequent in the 0-5 years age group (15%). In the 6-10 years age group, conjunctival disorders were most prevalent (5.7%), and eyelid disorders were most common (3.1%) in the 16-18 years age group.

Conclusion

The findings emphasize the need for early vision screening, particularly for refractive errors and Retinopathy of Prematurity. Many conditions identified were preventable or treatable, highlighting the importance of timely intervention to reduce

childhood blindness.

Keywords: Childhood Blindness, Refractive Error, Retinopathy of Prematurity.

Introduction

Childhood ocular morbidity significantly impacts a child's development, education, and quality of life. Globally, approximately 70 million blind person years are attributed to childhood blindness, which represents less than 4% of the total magnitude of blindness, but contributes to a third of its economic cost.⁽¹⁾ The World Health Organization (WHO) estimates that 0.7 million blind children live in the South-East Asia region, with India accounting for an estimated 320,000 blind children — the highest number in the world.⁽¹⁾⁽²⁾ The national prevalence of childhood blindness/low vision is approximately 0.80/1000, with rural areas showing a higher prevalence (1.25 per 1000) compared to urban areas (0.53 per 1000) in children aged 5-15 years.⁽¹⁾ The causes of childhood eye diseases resulting in visual impairments is different from region to region and is also influenced by racial, geographic, socio-economic, and cultural factors. A study of the pattern and frequency of ocular diseases is therefore important because as some eye conditions just cause the ocular morbidity while others may land up in blindness.⁽³⁾

Materials and Methods

Study Design: A hospital-based, cross-sectional observational study conducted at the New Civil Hospital, Surat.

Sample Size: A total of 573 participants were included based on inclusion/exclusion criteria

Inclusion: Children < 18 years

Exclusion: Children with intellectual disabilities.

Data Collection

All children (under the age of 18) visiting the ophthalmology Out Patient Department of a tertiary level healthcare hospital, with ocular complaints or referred for ophthalmic examination were assessed for the presence of any ocular diseases.

First, a detailed history was taken regarding the child's ocular complains, birth history, antenatal history, family history and other diagnosed neurological conditions if contributory, were noted.

Then, the patient underwent a series of ophthalmic tests and evaluations including Visual Acuity assessment, Anterior segment examination, Refraction and Fundoscopic evaluation.

Results

The majority of children (35.4%) were in the 0-5 years' age group, followed by the 11-15 years age group (26.8%), 6-10 years (23.5%), and 16-18 years (14.1%).

Males constituted 56.19% of the study population, while females accounted for 43.80%.

Refractive Errors were the most common disorder, accounting for 17% of cases, followed by Retinopathy of Prematurity (ROP), which was observed in 15%; of the children. Conjunctival disorders (14.1%) were also prevalent, with bacterial conjunctivitis being the most common condition within this category. In the 0-5 years age group, Retinopathy of Prematurity was the most prevalent condition, affecting 15% of the children. Children aged 6-10 years primarily exhibited conjunctival disorders (5.7%), while refractive errors were most common in the 11-15 years age group (8.7%). Among the 16-18 years age group, eyelid disorders were the most frequent, occurring in 3.1% of cases.

Distribution of Children According to Age Groups: (Table 1)

AGE GROUP	TOTAL(573)	PERCENTAGE
0-5 Years	203	35.4%
6-10 Years	135	23.5%
11-15 Years	154	26.8%
16-18 Years	81	14.1%

Distribution of Children According to Gender: (Table 2)

GENDER	TOTAL (n=573)	PERCENTAGE
MALES	322	56.19%
FEMALES	251	43.80%

Anatomic Distribution of Ocular Disorders: (Table 3)

ANATOMICAL SITE	TOTAL(n=573)	PERCENTAGE
Whole Globe	18	3.1%
Orbit	6	1.04%
Eyelids	75	13.08%
Lacrimal apparatus	18	3.1%
Conjunctiva and sclera	81	14.1%
Cornea	36	6.2%
Uvea	2	0.3%
Lens	47	8.2%
Vitreous and Retina	45	7.8%
Optic Nerves	14	2.4%
Squint	35	6.1%
Glaucoma	5	0.8%
Refractive error	93	17%
ROP	86	15%
Others	12	2.2%

Distribution of Individual Group of Disorders According to Age Groups: (Table 4)

Disorders	0-5 years	6-10 years	11-15 years	16-18 years
Whole Globe	-	5	7	6
Orbit	3	2	1	-
Eyelids	18	21	18	18
Lacrimal Apparatus	9	2	4	3
Conjunctiva and Sclera	25	33	23	-
Cornea	12	7	7	9
Lens	11	15	15	6
Uvea	-	1	-	1
Vitreous and Retina	6	5	18	16
Optic Nerve	2	2	6	4
Squint	14	11	8	2
Glaucoma	1	1	2	1
Refractive error	7	24	50	12
ROP	86	-	-	-
Others	3	4	2	3

This study provides a detailed examination of the prevalence and pattern of ocular disorders in children visiting a tertiary healthcare centre.

Refractive errors were most prevalent in older children, particularly in the 11-15 years age group, reflecting the impact of schooling and visual tasks that bring such issues to light. This reinforces the need for school-based vision screening programs, as early diagnosis can prevent long-term visual impairment.

ROP was highly prevalent in the youngest age group (0-5 years), consistent with the fact that our centre is a tertiary care institute with specialized services for neonatal care. This highlights the importance of

neonatal screening programs to detect ROP early, especially in premature infants, to prevent progression to blindness.

The study also revealed a significant burden of conjunctival disorders, particularly in the 6-10 years age group. The prevalence of bacterial conjunctivitis and vernal keratoconjunctivitis suggests the need for improved public health measures focused on hygiene practices and timely medical interventions to prevent these conditions from leading to more severe complications.

Eyelid disorders were more common in the older age group (16-18 years), indicating that conditions such as chalazion and ptosis are more frequent in this age

range. These findings suggest a need for awareness programs and early diagnosis to manage these treatable conditions effectively.

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