



ORIGINAL RESEARCH PAPER

Medical Science

PREVALENCE AND PATTERN OF CHILDHOOD OCULAR MORBIDITY IN WESTERN UTTAR PRADESH

KEY WORDS: Refractive error, Hypermetropia, Myopia , Vit A deficiency

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ABSTRACT

Introduction: Vision is crucial for the developmental milestones of children, impacting their learning abilities and overall quality of life. Childhood ocular morbidities, if left undetected, can lead to severe disabilities, including blindness. Worldwide, vision disabilities affect 285 million people, with childhood blindness being a significant contributor to years lived with disability. Understanding the pattern of ocular morbidity in children is essential for timely intervention and management. **Aim & Objective:** The aim of this study is to determine the pattern of ocular morbidity among children aged 5-14 years presenting at the outpatient department of ophthalmology in a tertiary care hospital. Specific objectives include assessing the socioeconomic status and demographic distribution (rural/urban) of the children and their parents, as well as evaluating the literacy levels of the parents. **Methodology:** This cross-sectional study will be conducted over one year at the OPD of the Upgraded Department of Ophthalmology, LLRM Medical College, Meerut. A sample size of 320 children will be randomly selected from outpatient and emergency departments. Data collection will include demographic details, socioeconomic status, literacy levels of parents, and ocular morbidity patterns. Statistical analysis will involve chi-squared tests and logistic regression as appropriate. **Result:** The study found a diverse pattern of ocular morbidities among children, with refractive errors being the most common issue, followed by infective conjunctivitis and vitamin A deficiency. Socioeconomic factors and rural/urban residence significantly influenced the prevalence of certain morbidities. These findings underscore the importance of early detection and targeted interventions to mitigate childhood blindness and improve overall visual health outcomes. **Conclusion:** The study provides a comprehensive insight into the pattern of ocular morbidity among children aged 5-14 years presenting to the ophthalmology outpatient department of a tertiary care hospital. The findings underscore the significant prevalence of refractive errors, particularly myopia and hypermetropia, as the leading causes of ocular morbidity in this age group. Socioeconomic factors, such as low socioeconomic status and urban residence, correlate significantly with certain ocular conditions like vitamin A deficiency and refractive errors. Gender-based differences were observed in the distribution of allergic conjunctivitis cases, emphasizing potential gender-specific susceptibility to certain ocular conditions.

INTRODUCTION

Vision is the primary component for an individual to perceive the world. The learning target begins in infancy and the precision of a child's vision can significantly affect or change the learning ability. Early years of life are most important in determining physical, intellectual, behavioural development and quality of life for a child. Any ocular morbidity which originates in childhood and if gone undetected, may result in severe ocular disabilities or even blindness. Ocular problems in children are unique and different from adults, not only due to their inability to express their problems, but also because of the potential to develop amblyopia. Although most ocular morbidities are due to carelessness and ignorance, they cause impairment of vision or even blindness. Childhood blindness is defined as best corrected visual acuity less than 3/60 in an individual aged 5-14 years. It is second only to cataract in terms of blind person years. That is why the control of childhood blindness is considered a high priority within the World Health Organization's (WHO's) VISION 2020 The Right to Sight programme. Childhood blindness poses particular challenges which are different from controlling adult blindness. The proportion of children in the age group of 5-14 years is expected to constitute 33.5% of the total population in India⁴. According to population-based studies done in India, the prevalence of ocular morbidity in children varies from 1 to 5%. 7.13.14 and data analysed from various school based studies shows a prevalence of 13 to 45%¹⁵⁻²⁷. With this background our study was conducted with the objective of determining the pattern of ocular disease in children belonging to the age group of 5-14 years.

the nuanced landscape of ocular health in a specific and critical demographic children aged 5-14 years, seeking medical attention at a tertiary care hospital. The motivation behind this inquiry is rooted in the recognition of the profound public health implications associated with ocular diseases in this age group, where untreated conditions may precipitate long-term consequences impacting educational achievements and societal productivity. Despite the extensive body of literature on ocular health, a noticeable lacuna exists, particularly in studies focusing comprehensively on the prevalence and patterns of ocular diseases among children aged 5- 14. This study aspires to bridge this gap by providing an intricate examination of ocular health within this specific age bracket.

AIMS AND OBJECTIVES

The present study was conducted in the OPD of UPGRADED DEPARTMENT OF OPHTHALMOLOGY LLRM MEDICAL COLLEGE AND ASSOCIATED SVBP HOSPITAL, MEERUT for the duration of one year..

The OBJECTIVE of the study was:

- Determine the prevalence and pattern of ocular morbidity in children 5 to 14 years of age.
- Socioeconomic status of the child
- Background of the child-Rural/Urban.
- Literacy of the parents.

MATERIAL AND METHODS

PLACE OF STUDY: A predesigned prospective study was conducted at the OPD of UPGRADED DEPARTMENT OF OPHTHALMOLOGY at

Rationale of the study: This research endeavours to delve into

LLRM Medical College MEERUT. Children between 5-14 years were randomly selected from routine OPD and emergency over the period of one year.

STUDY DESIGN: Cross sectional.

INCLUSION CRITERIA:

- Patient aged 5-14 years with complaints of any eye problem.
- Patient between 5-14 years, both sexes.
- Voluntarily given consent to participate in the study.

EXCLUSION CRITERIA:

- Patient with any other systemic illness.
- Patient not interested/unable to provide informed consent.

METHODS:

SAMPLE SIZE ESTIMATION

By knowing the prevalence 29.4% of ocular morbidity in children of age 5 to 14 years at 95% confidence interval with 5% absolute precision, sample size calculation is as follows.

$$N = (Z)^2 \times P \times Q / D^2$$

Where n=sample size.

P= anticipated value of proportion in the population. Q= 1-P

D= absolute precision.

$$N = (1.96)^2 \times 0.294 \times (1 - 0.294) / (0.5)^2$$

$$= 320 \text{ (making the calculation easier)}$$

RESULTS

Distribution of children according to presenting symptoms

Ocular history	Total, n	Percentage (%)
Blurring of vision	102	31.87
Asthenia/ Headache	82	25.62
Discharge	45	14.06
Pain and redness	20	6.25
Swelling	13	4.06
Itching	35	10.93
FB sensation	8	2.5
Watering	4	1.25
Traumatic injury	11	3.43
TOTAL	320	99.97

Distribution of children On the basis of Morbidity.

Morbidity	5-10 years of age	11-14 years of age	Total	Percentage (%)
Refractive error	49	113	162	50.62
Infection of eye and Adenexa	16	35	51	15.93
Amblyopia	10	12	22	6.87
Allergic conjunctivitis	13	28	41	12.81
Vitamin A deficiency	20	5	25	7.81
Ocular trauma and foreign body	5	5	10	3.12
Others	1	8	9	2.8
Total	114	206	320	100

The prevalence of Refractive errors with respect to age groups

Age group	Emmetropia	Myopia	Hypermetropia	Astigmatism	Total
5-10 years	65(57.01%)	11(9.64%)	32(28.07%)	6(5.26%)	114
11-14 years	93(45.14%)	81(39.32%)	25(12.13%)	7(3.39%)	206
Total	158(49.37%)	92(28.75%)	57(17.81%)	13(4.06%)	320

Distribution of Infective causes of ocular morbidity in children

Causes	Cases	Percentage(%)
Infective conjunctivitis	27	52.94
Blepharitis	14	27.45
stye	6	11.76
chalazion	3	5.88
Others	1	1.96
Total	51	100

Distribution of children with vitamin A deficiency and their socioeconomic status

Socio economic status	Vitamin A deficiency present	Vitamin A deficiency absent	Total
Upper	1(1.08%)	91(98.91%)	92
Middle	8(15.68%)	43(84.31%)	51
Lower	16(9.03%)	161(90.96%)	177
Total	25(7.81%)	295(92.18%)	320

CONCLUSION

A significant majority (64.44%) of the subjects were in the age group of 11 to 14 years, and the rest 35.56% belongs to the age group of 5 to 10 years.

Males slightly outnumbered females in the surveyed population, with 53.5% male and 46.5% female participants.

Gender distribution varied between age groups, with a higher proportion of males in the 11 to 14 years age group.

A substantial majority (55.3%) of the participants belonged to the low socioeconomic status group. Most informants were mothers (61.3%), followed by fathers (24.4%).

The educational distribution shows a significant majority (66%) with Illiterate.

Urban residents accounted for 60% of the participants, indicating a majority living in urban areas.

Refractive errors were the most common morbidity among children, affecting 50.62% of the age groups studied.

There was a significant association between age and refractive error, with a higher prevalence of myopia in the older age group (11-14 years).

The distribution of refractive errors showed no significant gender difference, but a strong geographical variation, indicating a significant association between urban or rural residence and the presence of refractive errors.

Allergic conjunctivitis was more prevalent among males than females.

Infectious causes of ocular morbidity were predominantly conjunctivitis and blepharitis.

Vitamin A deficiency showed a significant association with socioeconomic status and residence, being more prevalent in rural and lower socioeconomic groups.

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