



Clinical Study of Prevalence & Pattern of Ocular Diseases in Children between 5 to 15 Years in Delhi NCR Region

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ABSTRACT

This study was done to know the prevalence and pattern of ocular diseases in children of the age 5 to 15 years in Delhi NCR region. 200 Children of age group 5-15 yrs group were examined systematically and methodically with help and cooperation of the staff of the OPD as well as the guardian of the child under following parameters. Pre tested semi structured interview cum examination proforma was used for examination of children where the first part includes demographic information, ocular complaints if any and relevant past history, family history, personal history followed by general and systemic examination. In the second part, proforma includes various ophthalmological examinations. The prevalence of ocular morbidity among children of 5-15 years was found to be 29.5%. Refractive error (8%) was found to be the most common cause followed by ocular trauma (6%), congenital ocular morbidities (2.5%), VKC (2%) and then others. The ocular morbidity was highest (36.5 percent) in the 9-12 age range, while lowest (28 percent) in children aged 5-8 years as well as it was found more commonly in males (54.23%) than in females (45.76%). As today's child bears the nation's prospects on his back, childhood blindness can become obstruction in country's economic and social growth. If at an early age eye screening is done, child can be prevented from becoming blind.

KEYWORDS: Ocular morbidities, refraction, childhood blindness, trauma

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INTRODUCTION

According to World Health Organization (W.H.O.) "Every minute a child goes blind" which shows globally increasing incidences of childhood blindness [1]. Childhood ocular morbidities are more debilitating and disabling than the senile onset, because the child has to spend their whole life ahead with that morbidity. Childhood blindness contributes the commonest cause of blind- person-years, as the number of years a child has to live with blindness is equivalent total number of blind years old age person live due to senile cataract. The prevalence of childhood blindness is 1.4 million & 90% of them are living in developing countries and the regions of Asia & Africa contribute to three-quarters of childhood blindness worldwide where the prevalence is high [2]. Common ocular diseases seen in children includes refractive errors, infectious eye diseases, ocular trauma, vitamin A deficiency, color blindness and allergic eye diseases. If at an early age eye screening done, majority of these conditions are either potentially preventable or curable [3]. In 2001-2002 survey on blindness was conducted at national level which showed prevalence of defective vision was 7% in children of 10-14 years age group [4]. When a child has any form of visual impairment, it's very difficult for him or her to perform well in school. In the general public, there are many studies on the prevalence & severity of visual disability, but there is little knowledge on the prevalence, severity & causes of childhood ocular morbidity based on population-based studies which would be appropriate to plan & assess the preventive as well as curative service for children in a given region. After considering above mentioned facts, the present study was conducted in the outpatient department (OPD) of an Ophthalmology unit of Santosh Hospital, Ghaziabad (DELHI NCR) Region of Uttar Pradesh with the objectives of determining prevalence & patterns of various ocular diseases among the children of 5 to 15 years.

MATERIAL AND METHODS

The present study was approved by University ethical Committee. All children between age group of 5 to 15 years attending Ophthalmology OPD Ghaziabad were included in the study. 185 cases will be taken as sample size. Based on Formula $n = z^2 pq / d^2$, where $d = 0.05$ precision corresponding to effect size, $z =$

1.96 at 95% confidence limit, $p = 14.64\%$ prevalence [25]. (as per previous study), $q=1-p$, $n= [(1.96*1.96) * 0.14*0.86] / (0.05*0.05)$; $\therefore n= 185$. The following patients were excluded from the study:

- Children below 5 years & above 15 years.
- Previously diagnosed and treated children.
- Children not residing in Delhi NCR region

DATA ANALYSIS

Data collected manually & was edited thoroughly to check for completeness of answers, accuracy & consistency. Data was tabulated in windows excel sheet using MS Office & analyzed. Statistical analysis was performed using SPSS Statistics version 25 (Statistical Product for Solution services). By using appropriate standard statistical methods in online Graph pad software such as cross tabulation, frequency, graphs, histograms, mean, median, standard deviation. Descriptive data have been used to assess the ocular disorders detected in school children. The P value of less than 0.05 was found statistically important.

All children included in the study only after getting written informed consent from their parents or guardian, who were explained about the importance of vision and its requirement for overall development of the child. Children were examined systematically and methodically with help and cooperation of the staff of the OPD as well as the guardian of the child under following parameters.

Pre tested semi structured interview cum examination proforma was used for examination of children where the first part includes demographic information, ocular complaints if any and relevant past history, family history, personal history followed by general and systemic examination. In the second part, proforma includes various ophthalmological examinations.

Ocular examination included: Visual acuity measurement, Amblyopia detection, Color Vision testing, Squint detection, Anterior & Posterior Segment examination by using Slit-lamp Biomicroscope, Fundus examination with Direct & Indirect ophthalmoscope, Retinoscopy & Subjective Refraction in children having refractive error.

RESULT AND DISCUSSION

Out of 200 children of 5-15 years, included in the study 141 were found to be normal and 59 children were having some form of ocular morbidity (Table 1). Among 5 to 15 yrs, male and female were 14%, in children between 9 to 12 yrs, male were 20% and female were 16.5% and between 13 to 15 yrs male were 16.5% and females were 19%. (Table 2) . . Refractive Error (8%) was a commonest ocular morbidity found in all age group followed by Ocular Trauma (6%), Congenital Ocular Abnormalities (2.5%), Vernal Keratoconjunctivitis [VKC] (2%), Squint (1.5%) Amblyopia (1.5%), Blepharitis (1.5%), Vitamin A Deficiency (1.5%), Pre septal cellulites (1%), Bacterial Conjunctivitis (1%) & Corneal opacity (1%). While Sty (Hordeolum External), Internal Hordeolum, Corneal Ulcer & Iridocyclitis were least commonly seen (0.5% contributed by each) morbidity among study population (Table 3). Overall school performance in all children of 5- 15 years included in study suggest that Children without any ocular morbidity were performing better than children with any kind of ocular morbidity. Majority of children with Ocular morbidity had Poor school performance compared with normal children. There is highly statistically significant relationship between school performance & ocular morbidity ($p<0.05$).

Table 1. Total no of children with ocular morbidity

Total No of Children	Normal Children		Children with Ocular Diseases	
	Frequency	Percentage	Frequency	Percentage
200	141	70.5 %	59	29.5 %

Table 2. Gender wise distribution of children among different age groups.

Age Group	Male		Female	
	Frequency	Percentage	Frequency	Percentage
5 to 8 Yrs.	28	14%	28	14%
9 to 12 Yrs.	40	20%	33	16.5%
13 to 15 Yrs.	33	16.5%	38	19%
Total	101	50.5%	99	49.5%

There is a lot of difference in ocular morbidity in children from place to place. In the pattern of ocular disease incidence, different factors such as various weather conditions, poor nourishment of child & lack of treatment facilities also play an important role [5]. The prevalence of ocular morbidity among children of 5-15 years is found to be 29.5% in present study. Higher prevalence of ocular morbidity was reported by previous studies [6] from Northern part [7] from North-East part of India which was 49.09% & 76.30%

respectively. The lower prevalence of ocular morbidity was reported [8] from Telangana [9] from Maharashtra which was 7.26%, 10.5% respectively. These difference in ocular morbidity may be due to difference in examination method & diagnostic criteria used by various studies.

Table 3- Pattern of various ocular morbidities in affected children

Ocular Morbidity	Frequency	Prevalence (In %)
Refractive Errors	16	8%
Ocular Trauma	12	6%
Congenital Ocular Abnormalities	5	2.5%
Vernal Keratoconjunctivitis [VKC]	4	2%
Squint	3	1.5%
Amblyopia	3	1.5%
Blepharitis	3	1.5%
Vitamin A Deficiency	3	1.5%
Pre-septal Cellulitis	2	1%
Bacterial Conjunctivitis	2	1%
Corneal Opacity	2	1%
Stye	1	0.5%
Internal Hordeolum	1	0.5%
Corneal Ulcer	1	0.5%
Iridocyclitis	1	0.5%
Total No	59	29.5%

CONCLUSION

As today's child bears the nation's prospects on his back, childhood blindness can become obstruction in country's economic and social growth. These centres & our studies will function in the dark corridor of blindness as a ray of hope. A child vision can be saved just by screening them at an early age.

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