Pattern of Ocular Morbidities in Pediatric Age Group at a Tertiary Care Hospital

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ABSTRACT:

INTRODUCTION: Ocular morbidities among pediatric age group play a major role in the occurrence of blindness in the community ocular morbidity in children affects learning capacity and personality

AIM: To study ocular morbidities in pediatric patients

METHODS: It is a cross sectional descriptive study done at tertiary care centre from July 2002 to December 2023, according to patients attending outpatients department of ophthalmology and every consecutive patient is taken

RESULTS: We have evaluated 350 patients in which as per sampling 175 patients are taken in which most common presentation was blurring of vision and most common encountered ocular disorder is refractive errors (35.6%)followed by VKC (23.4%) and the ocular trauma (4%),other disease (3.4%)

CONCLUSION: From the results of this study, this can be concluded that most common is refractive errors, and it is presented in school going children. It highlights the need for proper eye health education in the community.

Keywords: VKC; pediatric age, Ocular trauma, refractive error

INTRODUCTION

Ocular morbidities among pediatric age group play a major role in their education in addition to occurrence of blindness in our community. Ocular morbidity in children affects learning capacity, adjustment in school, and personality 12.11.[1] Overall, 39 million people are blind worldwide, out of which 1.4 million are children (less than 14 years of age). In a survey on children under15 years of age, the rate of childhood blindness was 0.17%, of which 33.3% was due to treatable refractive errors while 66.6% was secondary to other preventable causes.[2,3] 14, Even in India, preventable and treatable causes like cataract, refractive error still contribute to more than 80% preventable blindness. 17. About 30% of blind population of India loose their eyesight before the age of 20 years and many of them are under 5 when they become blind. [4] The above data from the review of literature cleanly indicates the importance of this study. From this study many of the ocular morbidities can be diagnosed and prevented without any complications.[5] This

leads to reduction in blindness. There are many studies been done in north India but not much of studies been done in south India and most of the studies are community based studies and no such studies are done in tertiary care center in Karnataka. So the study is conducted determine the pattern of ocular morbidities among children and to evaluate pattern of ocular morbidities among children .

MATERIALS AND METHODOLOGY

This cross-sectional, hospital-based study was conducted in the Department of Ophthalmology, Vijayanagara Institute of Medical Sciences (VIMS), Ballari, over a period of 18 months from July 2022 to December 2023. The study included pediatric patients attending the Unit 2 Ophthalmology Outpatient Department (OPD). Ethical clearance was obtained from the Institutional Ethics Committee prior to the commencement of the study, and informed consent was obtained from the parents or legal guardians of all participants before enrollment. The study included children aged less than 15 years presenting with any ocular disorder involving one or both eyes. Patients were enrolled consecutively after obtaining informed consent. Children aged more than 15 years and those whose parents or guardians declined consent were excluded from the study. Based on hospital records, approximately 350 pediatric patients were expected to attend the Unit 2 Ophthalmology OPD during the study period. The sample size was calculated using the standard formula:

$$n = \frac{Z_\alpha^2 \times P(1-P)}{d^2}$$

where Z = 1.96 (95% confidence interval), P = 21.2% (prevalence of ocular morbidity reported in a previous Indian study) [6], and d = 7% absolute precision. The minimum calculated sample size was 350 participants, and all eligible patients presenting during the study period were included. All enrolled children underwent a comprehensive ophthalmic evaluation by experienced ophthalmologists, while refraction was performed by trained optometrists. Demographic details, clinical history, and examination findings were recorded in a predesigned proforma. The ophthalmic examination included assessment of visual acuity using the Snellen chart, anterior segment examination with a torch, colour vision testing using Ishihara charts, and slit-lamp biomicroscopy. Additional investigations such as cycloplegic refraction, dilated fundus examination, lacrimal syringing and probing, intraocular pressure measurement, visual field testing, and squint evaluation were performed whenever clinically indicated. Data collected from all participants were entered into a structured proforma and categorized according to age group and type of ocular disorder. The frequency and distribution of various ocular morbidities were analyzed in relation to the total number of pediatric patients attending the outpatient department during the study period, and appropriate inferences were drawn from the findings.

RESULTS

TABLE 1: AGE WISE DISTRIBUTION OF PATIENTS

AGE	No OF PATIENTS	PERCENTAGE
99-104	95	27.1%
99-104	133	38%
99-104	122	34.9%

A total of 350 pediatric patients were included in the study. The 5–10 years age group constituted the largest proportion (133; 38.0%), followed by the 10–15 years age group (122; 34.9%). Children aged 0–5 years accounted for 95 (27.1%) patients.

TABLE 2: GENDER DISTRIBUTION OF ALL PATIENTS

MALE	**206**
FEMALE	**144**

Among the 350 study participants, 206 (58.9%) were males and 144 (41.1%) were females, resulting in a male-to-female ratio of approximately 1.4:1.

TABLE 3: DISTRIBUTION OF DISEASES IN DIFFERENT AGE GROUPS

AGE GROUP	REFRACTIVE	SQUINT	VKC	CONJUCTIVAL DISEASE	LACRIAML DRAINAG E DISORDERS	LID DISORD ERS	DEVELOP MENTAL CATARACT	OCULAR TRAUM A	PTOSI S	MISCELLA NEOUS
0–5	33 34.7%	7 7.4%	12 6%	17 17.9 %	10 10.5%	2 2.1%	7 7.4%	5 5.3%	1 1.1%	1 1.1%
99-104	47 35.3%	6 4.5%	36 27.1 %	15 11.3 %	8 6%	6 4.5%	6 4.5%	5 3.8%	2 1.5%	2 1.5%
99-104	43 35.3%	6 4.7%	34 27%	15 11.8 %	7 5.9%	7 5.1%	4 3.9%	4 3.5%	1 1.2%	1 1.2%
TOTAL	123	19	82	47	25	15	17	14	4	4

Refractive errors were the most common ocular disorder across all age groups, affecting 123 (35.1%) children, followed by vernal keratoconjunctivitis (VKC) in 82 (23.4%) patients and conjunctival diseases in 47 (13.4%) patients. Lacrimal drainage disorders (25; 7.1%), squint (19; 5.4%), developmental cataract (17; 4.9%), ocular trauma (14; 4.0%), lid disorders (15; 4.3%), ptosis (4; 1.1%), and miscellaneous disorders (4; 1.1%) were less frequent. Refractive errors remained the predominant diagnosis in each age group, while VKC was more frequently observed among children aged 5–15 years.

TABLE 4 : GENDER DISTRIBUTION IN 99-104 YR AGE GROUP

S.NO	AG E GROU P	REFRACTIVE	SQUINT	VKC	CONJUCTIVAL DISEASE	LACRIAML DRAINAG E DISORDERS	LID DISORDERS	DEVELOPMENTAL CATARACT	OCULAR TRAUMA	PTOSIS	MISCELLANEOUS
1	0 TO 5	33	7	12	17	10	2	7	5	1	1
2	MALE	18	1	6	9	7	1	4	2	1	1
3	FEMALE	15	6	6	8	3	1	3	3	0	0

Among children aged 0–5 years, refractive errors (33 cases) were the most common ocular disorder, followed by conjunctival diseases (17 cases) and VKC (12 cases). Males predominated in refractive errors (18 vs. 15), conjunctival diseases (9 vs. 8), lacrimal drainage disorders (7 vs. 3), developmental cataract (4 vs. 3), ptosis (1 vs. 0), and miscellaneous disorders (1 vs. 0). Females showed a higher frequency of squint (6 vs. 1) and ocular trauma (3 vs. 2). VKC and lid disorders were equally distributed between males and females.

TABLE 5 : GENDER DISTRIBUTION IN 99-104 YR AGE GROUP

S.NO	AGE GROUP	REFRACTIVE	SQUINT	VKC	CONJUCTIVAL DISEASE	LACRI AMI DRAIN AGR DISORDERS	LID DISORDERS	DEVELOPMENTAL CATARACT	OCULAR TRAUMA	PTOSIS	CORNEAL DYSTROPHY
1	5 TO 10	47	6	36	15	8	6	6	5	2	2
2	MALE	27	4	19	10	6	4	4	2	2	2
3	FEMALE	20	2	17	5	2	2	2	3	0	0

In the 5–10 years age group, refractive errors (47 cases) and VKC (36 cases) were the predominant ocular disorders, followed by conjunctival diseases (15 cases). Males had a higher frequency of most disorders, including refractive errors (27 vs. 20), VKC (19 vs. 17), conjunctival diseases (10 vs. 5), lacrimal drainage disorders (6 vs. 2), lid disorders (4 vs. 2), developmental cataract (4 vs. 2), squint (4 vs. 2), ptosis (2 vs. 0), and corneal dystrophy (2 vs. 0). Ocular trauma was slightly more common among females (3 vs. 2)

TABLE 6 : GENDER DISTRIBUTION IN 99-104 YR AGE GROUP

S.NO	AGE GROUP	REFRACTIVE	SQUINT	VKC	CONJUCTIVAL DISEASE	LACRI AMI DRAIN AGR DISORDERS	LID DISORDERS	DEVELOPMENTAL CATARACT	OCULAR TRAUMA	PTOSIS	CORNEAL DYSTROPHY
1	5 TO 15	43	6	34	15	7	7	4	4	1	1
2	MALE	23	3	24	8	4	4	2	2	1	1
3	FEMALE	20	3	10	7	3	3	2	2	0	0

Among children aged 10–15 years, refractive errors (43 cases) and VKC (34 cases) remained the leading ocular disorders, followed by conjunctival diseases (15 cases). Males were

more commonly affected by VKC (24 vs. 10), refractive errors (23 vs. 20), conjunctival diseases (8 vs. 7), lacrimal drainage disorders (4 vs. 3), lid disorders (4 vs. 3), developmental cataract (2 vs. 2, equal), ptosis (1 vs. 0), and corneal dystrophy (1 vs. 0). Squint (3 vs. 3) and ocular trauma (2 vs. 2) were equally distributed between both genders.

DISCUSSION

In this study of paediatric ocular morbidities their was attempt to get to know the disease distribution in different age groups in this region depending upon the statistics of the

outpatient department of ophthalmology

This study showed that among less than 15 year age group the number of patients between the 5 to 10 year age group were of the majority and among all the patients most of the

patients came due to refractive errors followed by the conjuctival disorders then venereal keratoconjuctivitis,lacrimal drainage disorders also the majority of the patients were male patients in overall age group and individual age group of 5 years. [7,8,9]

At Sekhar O Akarkar [10] ,their was screening of 817 children in which the majority patients came due to refractive errors followed by conjuctival disorders similar to our study

At the study involved 633 children here the majority of cases were observed in 12 to 17 years age group in contrast our study it was in 5to 10 years age group in both the studies most common to which Patient came to out patient department is due to refractive errors,but in their study following Condition was Congenital anomalies

but in our case it was conjuctival disorders

At Hendricks et al and sterner et al, [11,12]the study included 282 children in which the majority of morbidity was observed among 10 to 14 year age group and they also studied the symptoms with which the patient presented to the hospital first was blurring of vision

followed by headache and the diseases were refractive errors followed by ocular infections similar to our study

As we observe this we can conclude that in majority of hospital the most common reason the patient comes to out patient department is for the refractive errors in all cases and the

following conditions differ in different regions and different hospitals depending upon the factors affecting the diseases.

CONCLUSION

As per the many studies main cause of the paediatric patient to come to outpatient department is decrease in vision due to refractive errors followed by conjuctival disorders and other diseases and this is confirmed in many of the other studies.

In tertiary care center many of the cases are referred from physicians and paediatricians the disease prevalence cannot be measured but we get the idea of the severity of the different problems and what are diseases present and what is the probability of that disease.

As disease distribution is affected by geography weather and socioeconomic situation of the population we cannot conclude absolute distribution. But we can infer the most probable cause in case of dilemma. If we have evidence of distribution of the disease in these areas as this study aims to full fill these requirements

Many studies with the same goal in all regions could get regional distribution of the studies which is of clinical significance to do a community based interventions and education camps

These studies provide the needed information for the distribution of appropriate health resources and to derive the health policy needed to benefit the needed population

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