A Study Of Ocular Disorders In School Going Children

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Abstracts: Background**:** Ocular disorders are often neglected in children. At the school going age. They find difficulties in their day to day activities. Refractive Error affects a large proportion of school going children. This can be easily diagnosed and corrected with spectacles. If not corrected, they become a major cause of low vision or even blindness. In India, children younger than 15 years constitute about 42% of the population and out of it 30% lose their eyesight partially due to amblyopia before the age of 20 years. So we have selected this study. Methodology**:** This was a cross sectional study. The study was conducted in Dhiraj Hospital & Eye camps for school children during November 2014 to October 2015. We have examined 350 children. We have used snellen's distant vision chart, torch light, direct ophthalmoscope and ishihara's colour vision chart in the camps. We referred children who needed detailed examination to Dhiraj hospital where we did cycloplegic refraction. They were examined with auto refractometer , direct and indirect ophthalmoscopy and they were called for Post mydriatic test and also for follow up of other ocular disorders. Results: Our study was conducted in schools of Vadodra district and in Eye Opd of Dhiraj Genral hospital attached with SBKS MIRC pipariya , dist. Vadodara in Gujarat state. We have examined 350 children and done their complete follow up. We found refractive error in 130 (37.14%) in children. Amongst them Refractive error -130 and other disorders like Lacrimal sac disorder – 6, Meibomian gland dysfunction (MGD) – 9, Conjunctivitis- 12 , amblyopia -3 ,squint -1, Others (Normal)- 189. P value was significant in case of refractive error. Conclusion**:** Ocular disorders in school going children vary from place to place, mal nutrition, lack of attendance from parents & teachers on their complains of eye disorders, in some areas where treatment facility in private or government set up is not available so their problems are neglected. Climate condition also play significant role. The present study indicates that the school age is a high risk group for developing refractive errors. Most of the children were unaware of their problem. Thus prevalence of undetected refractive error was more. Allergic conjunctivitis was another issue of concern. More studies, resources and manpower are needed to detect uncorrected refractive error and achieve the goal of vision 2020. [Brahmbhatt J NJIRM 2016; 7(3): 34 - 36]

Key Words: Ocular disorders, school, children.

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Introduction: There are an estimated 19 million children worldwide with visual impairment, of which 1.26 million are bilaterally blind.[1] It is estimated that 1.5 million children suffer from severe visual impairment and of these, one million children live in Asia. [2] In India 42% of the population is constituted by 0 to 17 years aged children. Amongst them nearly 30% have visual problems. If it is not cured nearly 30 % may lose their eyesight partialy due to amblyopia before the age of 20 years.

Approximately 500,000 children become blind every year[3] Eye diseases are an important cause of medical consultation.[4]This fact has initiated us for selection of this study. Ocular disorders are often neglected in children. At school going age, they find difficulty in their day to day activities. Refractive Error affects a large proportion of school going children. This can be easily diagnosed and corrected with spectacles. If the refractive error is not corrected at this age, the eye becomes amblyopic with low vision even after correction after 17 years of age. It is more common in hypermetropic eyes. Such amblyopic eye is also called lazy eye. It is a major cause of blindness. Thus early detection of refractive error is very important. Squint is one important problem found in school going children. To get binocular vision and to prevent amblyopia early detection and management of squint is very important.

Material and Methods: Our study was conducted in S.B.K.S.M.I.R.C., PIPARIA, VADODARA. After taking written consent from parents or teachers where parents were not available, data like name , age , sex , residence and socio-economical background were recorded than vision testing , refraction and torch lighting examination were done for all the patients. The whole data were then analysed in detail.

This was a prospective cross sectional study. The study was conducted in Dhiraj Hospital & Eye camps for school children during November 2014 to October

2015. A formal approval was obtained from ethical committee of the institute. We have examined 350 children. We have used Snellen's distant vision chart, torch light, direct ophthalmoscope and Ishihara's colour vision chart in the camps. We referred children who needed detailed examination to Dhiraj hospital where we did cycloplegic refraction.

They were examined with auto refractometer , Direct and Indirect ophthalmoscopy and they were called for Post mydriatic test and also for follow up of other ocular disorders as per requirement.

Results: Our study was conducted in schools of Vadodara district and in Eye OPD of Dhiraj Genral hospital attached with SBKS MIRC pipariya , dist. Vadodara in Gujarat state.

We have examined 350 children and done their complete follow up. We found refractive error in 130 (37.14%, p value - <0.0001) children, Amongst them Myopia (20%) ,Hypermetropia (4.28%), Astigmatism (12.85%). Other disorders like Lacrimal sac disorder and MGD (4.28%), Squint (0.25%), Amblyopia (0.85%), Allergic conjunctivitis(2.85%), Infective Conjunctivitis (0.56%). Chakraborty *et al*.[7] had found the incidence of conjunctivitis to be 29.57% in their study.

Table 1 (n = 350)

Sex distribution in Study group		
Sex	Number	Percentage
Male	276	78.85 %
Female	74	21.15 %
Total	350	100 %

Table 2 (n = 350)

Age distribution in the study group		
Age of children	Number	Percentage
Less than 6 years	62	17.71%
6-12 years	172	49.15%
12-17 years	116	33.14%
Total	350	100%

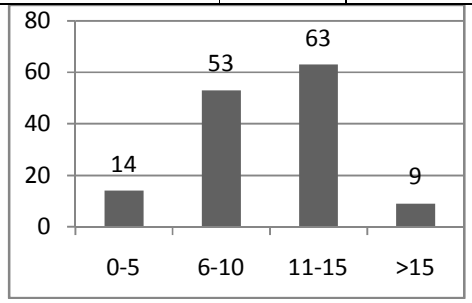

Table 3 (n = 130)

Age of child	Age-sex distribution of refractive error in study group			
	Male	%	Female	(%)
Less than 6 years	19	18.44	4	14.81
6-12 years	51	49.51	12	44.44
12-17 years	33	32.03	11	40.74
Total	103		27	

Table 4 (n = 350)

Pattern of ocular disorder		
Ocular disorders	No.	Percentage
Myopia	70	20%
Hypermetropia	15	4.28%
Compound hypermetropic Astigmatism	22	6.28%
Compound myopic Astigmatism	12	3.42%
Mixed Astigmatism	11	3.14%
Lacrimal sac disorder and MGD	15	4.28%
Amblyopia	3	0.85%
Squint	1	0.28%
Conjunctivitis- Infective	2	0.56%
Conjunctivitis – Allergic	10	2.85%
No Ophthalmic disorders	189	54%

Discussion: In our study refractive error was the most common ocular disorder found in our study. 130 cases were refractive errors (37.14%). Amongst refractive errors majority of cases were simple myopia (70 cases) followed by astigmatism (45 cases) of which 22 cases were of compound hypermetropia, 12 cases of compound myopia and 11 cases of mixed astigmatism. Hypermetropia was also found in 15 cases. It was explained to their parents , caretakers and teachers about their need for spectacles. 12 cases (3.4 %) of conjunctivitis (infective and allergic) and 6 cases of lacrimal sac disorder and 9 mebomian dysfunction (4.2%). They were given medications free of charge. One case of squint was found. Strabismus was found in 0.28% children in our study group. The study of Adeoya *et al*[5] found the incidence of strabismus to be 2.4%. No colour vision defect were found.

They are referred to Dhiraj hospital where total workout and management done. We have found no Mal-nutrition cases as we have done study in urban private schools where economically higher standard children are admitted. School going children have a

high incidence of ocular trauma, which may be potentially serious injuries or may be vision threatening injuries.[6] We have not detected any ocular trauma case in our study.

Refractive error is an optical defect, intrinsic to the eye which prevents light from being brought to a single point focus on the retina, thus reducing vision Refractive error remains one of the primary causes of visual impairment in children worldwide.[7] Refractive errors and more particularly myopia, place a substantial burden on the individual and society. School-age children constitute a particularly vulnerable group where uncorrected refractive errors may have a dramatic impact on learning capability and educational potential. [8] Prevalence of visual impairment in children varies from as low as 2.72% in South Africa to as high as 15.8% in Chile.[9,10]Less than 1% prevalence of refractive errors was reported in primary school children in rural Tanzania,[11]1% in Katmandu[12] , 14.8% in Malaysia[13], The economic costs of correction for myopia with spectacles, contact lens or LASIK in optometry and ophthalmology centres amount to billions of dollar[14] Strategies to address the eye health of children in India have focused on school eye health programs. School eye screening programs have been part of the activities of the district blindness control society (DBCS) activities since 1996[15].

Conclusion: Ocular disorders in school going children vary from place to place, mal nutrition, lack of attendance from parents. Ophthalmic facility for diagnosis & treatment are not available in private or government setup. Climate condition also play significant role. The present study indicates that the school age is a high risk group for developing amblyopia due to refractive errors. Most of the children were unaware of their problem. Thus prevalence of undetected refractive error was more. Allergic conjunctivitis was another issue of concern. More studies, resources and manpower are needed to detect uncorrected refractive errors and their managment to achieve the goal of vision 2020.

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