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TO STUDY THE PREVALENCE OF REFRACTIVE ERRORS AMONG SCHOOL CHILDREN OF 6-12-YEARS OF AGE GROUP ATTENDING OUT PATIENT DEPARTMENT.

Ophthalmology

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KEYWORDS

Refractive error (RE) is one of the most common causes of visual impairment around the world and the second leading cause of treatable blindness[1,2]. Childhood blindness is one of the priorities in Vision 2020.[3] An estimated 19 million children are visually impaired worldwide of which 12 million are due to refractive errors which could be easily corrected[4]. School-age children constitute a particularly vulnerable group because uncorrected RE may have a dramatic impact on learning capability and educational potential [5] The refractive error is an optical defect, intrinsic to the eye which prevents light from being brought to a single point focus on i retina, thus reducing normal vision. Symptoms and signs associated with refractive errors are the most worrisome and common presentations in the general practice in ophthalmology OPD. The most common symptoms related to refractive error are decreased vision,blurring of vision, headache , watering from the eye ,eye strain while reading or doing near work, history of frequent styes etc .Diagnosis and treatment of refractive errors is relatively simple and is one of the easiest ways to reduce impaired vision. Therefore, we believe that the magnitude of the problem of refractive errors needs a systematic assessment of vision and correction by the application of appropriate glasses at an early age. Although the national programs are aimed at controlling blindness, the number of children developing refractive error keeps on increasing day by day. This may be due to lack of awareness about risk factors and complications that arise due to refractive error.

MATERIALAND METHODS:

This study was conducted in 500 school going children of age group of 6 to 12 years attending Ophthalmology OPD and also included the referrals from Pediatrics department. Cases were defined as visual acuity 6/6 or worse without spectacles. Details regarding socio-demographic factors and visual examination were noted in detail. The visual acuity tested with the Snellen chart. Pin hole testing was also done. Retinoscopy, auto refraction, examination of the anterior segment, ophthalmoscopic examination of the posterior segment and ocular motility evaluation were advised for children when best corrected visual acuity could not be achieved. School children presenting with organic defects in eye such as corneal opacity, lenticular opacity , choroid and retinal disorders were excluded from study.

RESULTS:

This study which included 500 student revealed that the prevalence of refractive errors was 7.0% in which myopia is the most common refractive error in 22 (62.85%) followed by the astigmatism in 8 (22.85%) and hypermetropia in 5 (14.28%) among the children with refractive errors .

Table 1: Distribution of refractive error.

Types of refractive error	No. of children	% in the study group	% among the cases
Myopia	22	2.2	62.85
Hypermetropia	5	0.5	14.28
Astigmatism	8	0.8	22.85
Total	35	3.5	100

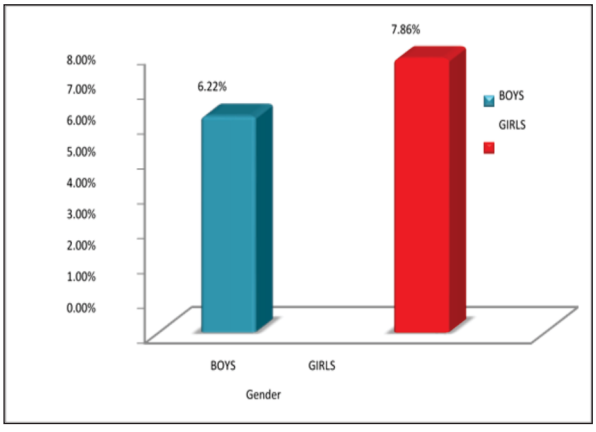

Figure1 Female students (7.86%) were affected more than males (6.22%)

Table 2 Prevalance of refractive error in urban and school children

	Refractive error(35)	Percentage
Urban	23	65.71
rural	12	34.28

The difference was statistically significant.

Of the risk factors studied positive family history, prolonged mobile viewing, TV /computer viewing duration and distance had a statistically significant association to the prevalence of RE

After examining the school children spectacles were prescribed to all 35 students having refractive error (Table 2). On follow up after 2 months found that 20 students were wearing spectacles while the rest 15 students did not wear the spectacles even after prescription.

Table 3: Distribution of students on follow up after 2 months.

	Number of children	Percentage (%)
Wearing spectacles	20	57.1
Not wearing spectacles	15	42.9
Total	35	100

Table 4: Age wise Distribution

Age in years	Refractive errors		Total
	Present	Absent	
6 - 8	11 (5.27%)	198 (94.73%)	209 (100%)
9- 10	16 (7.54%)	203 (92.23%)	219 (100%)
11 - 12	8 (11.11%)	64 (88.89%)	72 (100%)
Total	35 (7.0%)	465 (92.9%)	500 (100%)

DISCUSSION:

In our study the prevalence of refractive errors was 7.0% which was

similar to GvS Murthy et al in New Delhi (6.4%[6]),Kumar et al in Lucknow (7.4%[7]). About 32%[8] prevalence rate of refractive errors has been reported among school children of age 3-18 years from South India.[7] A higher prevalence could be due to multiple factors like population size, geographical locations, and race leading to various disparities. This study reports prevalence of myopia, hypermetropia and astigmatism among 6-12 years children as 62.85%, 14.28% and 22.85%, respectively. Similar to prevelance of refractive error in school children of Tafila city conducted by Hussain A et al, it was found that myopia 63.5% was most common refractive error followed by astigmatism 20.4% and hypermetropia 11.2%[9] In our study girls are affected more as compared to boys .Similarly study conducted by Bhutia et al in which girls were mostly affected with 6.9% refractive errors as compared to boys 5.9%[10]. S Seema et al also found that prevalence of refractive error was 23.7% in girls and only 12.2% in boys.[11]

In our study we have seen that 65.71% of children were from urban school where as 34.28% were from rural school. Our results coincides with the study conducted by Priyadarshani R et al on prevalance of refractive error in rural and urban school children .A Cross sectional study which shows that 64% of children from urban and 36% from rural school.

We have found in our study only 57.1% of students are wearing spectacles and rest of them are not using it. The cause could be teasing and bullying by peers. Girls cited parental disapproval as a reason and some report headache or discomfort with spectacle frames.

CONCLUSION:

The present study indicates that the school age is a high risk group for developing refractive errors with myopia being the most common. Use of laptops, increased screen time (TV viewing and computers or mobiles) has raised the incidence of refractive error. Early detection and timely intervention can easily eliminate these treatable causes of visual impairment The necessity of proper and constant wear of spectacles should be emphasized as it is evident in our study that large no of students are not wearing spectacles even after prescription . Also screen time should be curtailed as it is seen in our study that students belonging to urban area have more prevalance of refractive error than rural students. This difference may possibly be due to more use of computers and laptop than their counterpart.

REFERENCES

1 Kannan U , Rajendiran A , Yeraballi D et al Refractive error and associated risk factors in 6-12 years school children. National journal of physiology, Pharmacy,Pharmacology 2016 .VVVVV
2 World Health Organization. Global initiative for the elimination of avoidable blindness. Programme for the Prevention of Blindness and Deafness. Geneva: WHO, 1997.
3 Murthy G V S. Vision testing for refractive errors in schools: 'Screening' programmes in schools. Community Eye Health. 2000;13(33):3-5.
4 Resnikoff S Pascolini D, Mariotti SP et al. Magnitude of visual impairment caused by uncorrected refractive errors in 2004 Bull World Health Organ.2008;86:63-70
5 Negrel AD, Maul E, Pokharel GP et al Refractive error study in children: Sampling and measurement methods for a multi-country survey. Am J Ophthalmol. 2000;129(4):421-6.
6 Murthy GV, Gupta SK, Ellwein LB et al. Refractive error in children in an urban population in New Delhi. Invest Ophthalmol Vis Sci. 2002;43:623–631.
7 Kumar D, Singh JV, AhujaP.C et al Ocular morbidity among school children in Sarojini Nagar Lucknow. Indian J Community Med. 1992;17:109-113.
8 Kalikivayi V, Naduvilath TJ, Bansal AK et al Visual impairment in school children in southern India. Ind J Ophthalmol. 1997;45:129-34.
9 Hussein AB ,Ahmed E K Prevalance of Refractive Errors in School Children of Tafila City.Rawal.Med.J. 2008;33:85-87
10 Bhutia K L,Bhutia S C,Gupta Nisha et al Prevalence of refractive errors among the school-going children in East Sikkim ijo Aug2021 ;69(8):p2018-2020
11 Sharma S, Vashisht B M, Goel M et al . Magnitude of Refractive Errors among school children in a rural block of Haryana. The Internet Journal of Epidemiology. 2009;6(2). DOI: 10.5580/1e5f
12 Priyadarsini R, Kanchana K, Shanmugapriya et al Prevalance of Refractive Errors in ruraland urban school children-a cross sectional study int,J.Adv.Res5(3),554-557