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Original Research

Assessment of profile of newly detected refractive errors among school going children

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ABSTRACT:
Background: The present study was undertaken for assessing profile of newly detected refractive errors among school going children. **Materials & methods:** The present study was undertaken for assessing profile of newly detected refractive errors among school going children. A total 200 school going children of upto 16 years of age were enrolled. All children underwent slit lamp evaluation and fundoscopy. Cycloplegic refraction was carried out followed by post mydriatic test (PMT). Refractive errors were classified according to the standard definitions as myopia, hypermetropia and astigmatism. Complete demographic and clinical details of all the patients were obtained. **Results:** Mean age of the patients 8.6 years. 59.5 percent of the patients were females. Out of these 100 school going children, myopia was present in 54 percent of the patients while Hypermetropia and astigmatism were seen in 28 percent and 18 percent of the patients respectively. **Conclusion:** Myopia is the most common type of refractive error encountered among school going children.
Key words: Refractive, Errors, Children

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INTRODUCTION

Eyes are the windows of learning and visual appreciation of objects that contribute to learning in any individual's life. The visual cortex of the brain needs a continuous, clear and focused visual stimulus for a normal development of the visual system in early childhood. Amblopia is the reduction of visual acuity of 2 or more lines in the snellens chart in one or both eyes in which no structural abnormality can be made out in the eyes. Amblyopia is the most common cause of preventable monocular/binocular blindness. The causes of amblyopia include strabismus, anisometropia, high refractive errors, high astigmatism, media opacities, ptosis etc.[1- 3] Children with severe learning and behavioural disabilities only are often brought to eye care personnel for evaluation. Blindness due to refractive error usually manifests at an early age and the number of blind-person-years due to refractive error in developing countries is approximately twice as high as cataract related blindness. Personal and socio-cultural factors contribute to an inability to visit eye care professionals leading to diverse consequences.[4- 6] Hence; the present study was undertaken for assessing profile of newly detected refractive errors among school going children.

MATERIALS & METHODS

The present study was undertaken for assessing profile of newly detected refractive errors among school going children. A total 200 school going children of upto 16 years of age were enrolled. Uncooperative children and those with dense media opacities or history of any intraocular surgery were excluded from the study. Unaided visual acuity of all children was measured with the help of Snellen chart. All children underwent slit lamp evaluation and fundoscopy. Cycloplegic refraction was carried out followed by post mydriatic test (PMT). Refractive errors were classified according to the standard definitions as myopia, hypermetropia and

astigmatism. Complete demographic and clinical details of all the patients were obtained. All the results were recorded and analysed by SPSS software.

RESULTS

A total of 200 school going children were analysed. Mean age of the patients 8.6 years. 59.5 percent of the patients were females. Out of these 100 school going children, myopia was present in 54 percent of the patients while Hypermetropia and astigmatism were seen in 28 percent and 18 percent of the patients respectively.

Table 1: Demographic data

Variable		Number of children	Percentage
Age group (years)	Less than 10	114	57
	10 to 16	86	43
Gender	Males	81	40.5
	Females	119	59.5

Table 2: Type of refractive errors

Refractive error	Number of children	Percentage
Myopia	108	54
Hypermetropia	56	28
Astigmatism	36	18

DISCUSSION

Refractive errors include myopia, hypermetropia and astigmatism. They cause defocussing of images formed on the retina of a relaxed eye resulting in poor vision and/or asthenopia (eye strain). Uncorrected refractive errors in children can result in amblyopia, limited or slow academic progress, poor social functioning and impaired quality of life. Refractive errors can be easily diagnosed, measured and corrected. In fact, spectacle correction of refractive errors is considered to be one of the most cost effective interventions in eye care. However, refractive errors often remain uncorrected due to various reasons such as lack of awareness, failure to recognize symptoms in children by parents and teachers, non-availability or inability to afford refractive services and negative attitude to the use of spectacle in children.[6- 9] Hence; the present study was undertaken for assessing profile of newly detected refractive errors among school going children.

In the present study, a total of 200 school going children were analysed. Mean age of the patients 8.6 years. 59.5 percent of the patients were females. Sathyan S et al analysed the demographic profile of newly detected refractive errors among schoolgoing children. Out of the total 91,628 school going children, 1079 (1.18%) were newly prescribed with spectacles. Out of these, 549 (50.80%) were boys and 530 (49.20%) were girls. Myopic astigmatism was the most common refractive error (68.30%) in all the age groups taken together and individually. Simple myopia was seen in 13.81%, hypermetropic astigmatism in 13.07%, mixed astigmatism in 3.89%, and simple hypermetropia in 1.20% newly prescribed cases. In the 10–12 year age group, there was a significantly higher chance of occurrence of refractive errors of all types among the rural children in comparison to their urban counterparts. In the 6–9 years' age group, there was a significantly higher chance of occurrence of hypermetropia, hypermetropic astigmatism, and mixed astigmatism among the rural children when compared to the urban children. Prevalence of spectacle use was less than the need for spectacle correction among school going children.[10]

In the present study, out of these 100 school going children, myopia was present in 54 percent of the patients while Hypermetropia and astigmatism were seen in 28 percent and 18 percent of the patients respectively. Saha M et al assessed the prevalence of refractive errors, among school children in the age group of 5-15 years. A total of 1840 children were examined. Of which 53.6% of the study population were boys and 46.4% were girls. The mean age of the study group was 12.4 years. 48.5% of the children were in the age group of 13-15 years. 44.4% of the refractive error was detected in children studying in class 8, 9, and 10. The prevalence of refractive error in our study population was 13.86%. Urban and rural children were 7.03%. Myopia was noted to be the most common refractive error followed by hypermetropia and astigmatism. It was also noted in our study that the prevalence of refractive error was more common in the female children. It was also noted that there was a relationship between family history of parents or siblings having refractive errors. The prevalence of uncorrected refractive error, especially myopia, was higher in older children.

CONCLUSION

Myopia is the most common type of refractive error encountered among school going children.

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