

Original Article

Frequency of Refractive Error in Children of District Abbottabad

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ABSTRACT

Objectives: To investigate the prevalence of refractive errors in children.

Design and Place of Study: A descriptive case series study of 10,000 patients conducted in the department of ophthalmology Shahina Jamil Teaching Hospital Frontier Medical College Abbottabad. 10-15 years old children of district Abbottabad were initially screened. Children identified to have visual acuity equal to or less than 6/12 underwent refraction with autorefractor (with cycloplegic where needed) and were prescribed glasses.

Duration of Study: From 2008-2009.

Outcome Measure: Proportion of children with Myopia, Hypermetropia and Astigmatism.

Results: A total of 10,000 children were screened. 4.7 % of the total children screened had impaired visual acuity while 4.35% were found to have refractive errors. Prevalence of refractive error was found slightly more common among females. Myopia was found to be three times more common 3.33% than hypermetropia (1.00%) overall prevalence of astigmatism was found to be (1.78 %).

Conclusion: Refractive errors are significant cause of visual disability in children. Medical staff can effectively identify those children with poor vision for refraction and spectacles.

keywords: Myopia, Astigmatism, HYPERMETROPIA, and Aphakia.

INTRODUCTION

Refractive error¹ is found to be 2.3 billion world wide. 500 million people including many children with uncorrected error cause either blindness or impaired vision. Refractive error remains under corrected in 50% of cases². In the last fifty years there has been four-fold increase in myopia³.

In Pakistan 11.4% of the blindness is due to refractive errors including aphakia⁴. This amount of blindness suggests that eye care services are inadequate.

PATIENTS AND METHODS

This study is based on the screening results of children from 2008 to 2009. A total of 10,000 children were screened during this period. Children belonged to rural and urban areas of district Abbottabad.

Children with visual acuity of 6/12 or worse were registered. Ophthalmic equipment comprised of trial box, ophthalmoscope, retinoscope, autorefractometer and slitlamp. Children underwent eye examination and refraction followed by prescription of spectacles where needed.

RESULTS

Total of 10,000 children screened over a period of 2 years. The age range was from 10-15 years. 56% were male children while 44% were females. (56,00 and 44,00 respectively). Number of children identified to have impaired visual acuity was 470 or 4.70% of the total children screened 53% of children had visual acuity between 6/12 to 6/18. 4.35% or 435 were found to have refractive errors including 2 children with Aphakia. Prevalence of refractive errors was found to be slightly more common among females (4.20 % or 200 out of 44,00 females then in male children (4.20 % or 235 out of 56,00 male children) table 1. Myopia (both spherical and cylindrical was found to be three time more common (3.33 %) than hypermetropia (1.00 % both spherical and cylindrical) overall prevalence of astigmatism (both myopic and hypermetropic) was found to be 1.83 % (Table 1 and 2).

Table-1: Break-OD of refractive error –435 children

Type of Refractive Error	Male	Female	Total
Myopia	177	156	333 (76.55%)
Hpermetropia	55	45	100 (22.99%)
Aphakia	1	1	2 (0.48%)
Total	233 (53.56%)	202 (46.44%)	435 (100%)

Table-2: Prevalence of refractive errors in 10,000 school children

Type of Refractive error	Prevalence	Number
Overall prevalence of Refractive error	4.35 %	435
Myopia	3.33%	333
Simple	1.82%	182
Astigmatic	1.51%	151
HYPERMETROPIA	1.00%	100
Simple	0.68%	68
Astigmatic	0.32%	32
APHAKIA	0.02%	2

DISCUSSION

Prevalence of 4.35% of refractive errors in children population is an indicator for burden of effectively treatable visual impairment in children. With 58 million children up to 15 years of age⁵ there could be 2.5 million children in need of spectacle correction in Pakistan. Survey of blindness⁶ has shown refractive errors including Aphakia to be the third commonest cause of blindness in Pakistan (11.4 %) behind cataract (66.7%) and corneal opacity (12.6 %). An Indian study has found that refractive errors were responsible 12.5% of the blindness⁷ and 59.4% of moderate visual impairment⁸. An Australian study⁹ has found out refractive error to be the fourth most common cause of blindness.

A study carried out by Al-Shifa¹⁰ has found out that 4.46 % of blindness in school children was because of refractive error. Uncorrected myopia and Aphakia were responsible for 3% of blindness in school children in Zimbabwe¹¹. Uncorrected Aphakia and amblyopia were responsible for 5.1% blindness among blind school children in india¹². 76.00% of the refractive error in our study was Myopia some other studies have shown myopia to be almost the only refractive error^{13, 14}. Refractive error studies in children have shown prevalence of myopia 3.4% in chile¹⁵, less than 3 % in Nepal¹⁶ and not presenting that age in china¹⁷. The prevalence of myopia has also increased in both Singapore and Japan^{17, 18}. Studies of the population in Singapore^{19, 20} showed varying rates of myopia.

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CORRIGENDUM

The original article namely “Ureteric Injuries in Gynaecological Surgery: An Experience of 19 Cases” published in Volume 21 No.12, December 2010, the designations of authors No. 2 and 3 may read as Nasim-ul-Majeed, Dean/Principal & Prof. of Surgery, FUMC, Rawalpindi and Sami Ullah, Asstt. Prof. of Surgery, FUMC, Rawalpindi.

Editor.