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Research Article

**FREQUENCY OF REFRACTIVE ERRORS AMONG  
CHILDREN OF 5-15 YEARS AGE VISITING EYE OUTDOOR  
BAHAWAL VICTORIA HOSPITAL OF BAHAWALPUR**

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**Abstract:**

*Refractive error is an important cause of visual impairment in school children. Visual impairment in school children may effect education and career development. Aim: To determine the Frequency of refractive errors among Children of (Age 5-15 Years) Visited Eye Outdoor of Bahawal Victoria Hospital of District Bahawalpur. Material and methods: This cross sectional study was conducted in BVH during August 2017 to October 2017. Sample size was 100 Children coming to eye OPD of Bahawal Victoria Hospital Bahawalpur, out of them 50 were boys and rest were girls. Their visual acuity was noticed by Snellen's visual acuity chart, with the help of visual acuity and subjective refraction, the frequency of refractive errors was accessed. Conclusion: More than half of the children had refractive error. According to our result myopia is more common than hypermetropia.*

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**INTRODUCTION:**

The latest global estimates of visual impairment suggest that estimated 2.3 B people worldwide have a refractive error and among children aged 5-15 yrs. 12.8 M were visually impaired due to refractive representing a frequency of 0.97% with high frequency reported in china and urban areas of south east Asia(1) . There are several epidemiological reports on refractive errors in school age children from Asia and other countries, such as, south Korea, Japan, China, nepal, malaysia, india. The frequency rates of refractive error are different from epidemiological studies from china and frequency of myopia is higher in china indicating that difference in ethnicity regional and economical differences and developmental level could affect the frequency of refractive error for instance, it has been reported demonstrated that different ethnic group show different frequency rates of refractive errors(2) . Effective vision and childhood blindness may affect undesirably the life style of particular child for rest of his social and educational life. Childhood blindness needs special attention due to number of years. A child spent with defective vision (3).

**Aims and objectives**

To determine the Frequency of refractive errors among Children of (Age 5-15 Years) Visited Eye Outdoor of Bahawal Victoria Hospital of District Bahawalpur.

**MATERIAL AND METHODS:**

This cross sectional study was conducted in BVH during August 2017 to October 2017. Sample size was 100 Children coming to eye OPD of Bahawal Victoria Hospital Bahawalpur, out of them 50 were boys and rest were girls.

**Inclusion criteria**

Children Age 5-15 Years attending Eye OPD Both Gender.

**Exclusion criteria**

Students who are not willing to be included in this study, students having corneal opacities, keratoconus, strabismus, nystagmus, corneal abcess, conjunctivitis, any lenticular pathology, aphakia, pseudophakia and all other inflammatory diseases.

**Data collection and analysis**

Visual acuity of subjects was noticed by snellen's visual acuity chart, with the help objective and subjective refraction. The frequency of refractive errors was assessed.

**RESULTS:**

My study was conducted on 100 children age 5-15 year who were attending Eye OPD out of which 50% were boys and 50% Girls. Regarding age distribution ametropes out of 61 patient 19 were (5-10Year) (31.14%) and rest were 10-5 year (68.85%). Regarding distribution of refractive error there are 40 myopes (65.57%), 4 hyperopes (6.55%) and 17 astigmatism (27.86%). Regarding the distribution of astigmatic error there were 10 myopic astigmatism (58.80%) and 7 were hypermetropic astigmatism (41.17%). Regarding the distribution of myopic out of 40 there were 20 girls (50%) and 0 boys (50%). Regarding the distribution of hypermetropes 4 were boys (75%) and 1 girl (25%). In relation to Refraction we have 39 emmetropic (39%) children and 61 ametropic (61%).

**Table No 1: Age distribution according to refractive error**

Age in year	Frequency
5-10 years	19
10-15 year	42
<b>Total</b>	<b>61</b>

**Table No 2: Distribution of Ammetropes according to Type of refractive error.**

Type of refractive error	Frequency	Percentage
Myopia	40	65.57 %
Astigmatism	17	27.86 %
Hyperopia	04	6.55 %

**Table no 3: Distribution of Myopia with reference to gender**

	Frequency	Percentage
<b>GIRLS</b>	<b>20</b>	<b>50%</b>
<b>BOYS</b>	<b>20</b>	<b>50%</b>

**Table No 4: Astigmatism in Myopic Versus Hypermetropic**

	Frequency	Percentage
<b>Myopic astigmatism</b>	<b>10</b>	<b>58.82 %</b>
<b>Hypermetropic astigmatism</b>	<b>7</b>	<b>41.17%</b>

**DISCUSSION:**

The frequency of different types of refractive errors among school children has already been evaluated in various studies during the past years. In any discussion of the frequency of refractive errors, we must consider that the frequency varies widely from one geographical, racial or occupational group to another. Factors such as types of studied populations, different definitions, and methods of measurement (cycloplegia or non-cycloplegia), patient's age and ethnic differences could be responsible for these differences. (3,4,5)

In our study frequency of myopia was 40%, Hypermetropia was 4% and astigmatism was 17%. Also our study reveals myopia is more common than hypermetropia and astigmatism is more common than hypermetropia. In one study in Iran reveals overall myopia was 3.4%, Hypermetropia 16.6% and astigmatism 18.7%. In a study done by Afghani et al in-school children found that myopia was three times more common (3.26%) than hypermetropia (0.99%). Our study also revealed that there was a negative correlation between spherical equivalent and the age of the children. This is consistent with other studies<sup>18</sup> where there was a decrease in the proportion of hypermetropia with age and an increase in myopia. This trend may be attributed to the theory of emmetropization in which there is a shift from hypermetropia in early childhood to emmetropia as the child grows. Myopia has been reported to be associated with female gender, older children, parental educational attainment, ethnicity, urban dwellers and parental and sibling myopia.(3,4,5)

**CONCLUSION:**

More than half of the children had refractive error myopia is more common than hypermetropia.

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