



A STUDY OF THE PATTERN OF OCULAR MORBIDITY IN SCHOOL GOING CHILDREN IN RURAL AREA

Ophthalmology

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ABSTRACT

We wanted to determine the prevalence of ocular morbidity among school going children between ages of 6 and 16 yrs. in public schools of urban and rural areas. A cross-sectional prospective study was done among a total of 2105 school going children (rural - 956 and urban - 1149), 6-16 years of age in rural and urban areas. A comprehensive ocular examination was done with the help of torch light, slit lamp and +90 D and direct ophthalmoscope to examine the anterior & posterior segment pathologies. Ocular morbidity in the rural population was 817 (no. of diagnosed cases) of which 43.30 % were in rural areas of which 63.52 % were males. 35.07 % were in urban areas of which 57.81 % were males. The most common type of ocular morbidity in rural population was refractive error (15.9 %), followed by vitamin A deficiency (12.86 %), blepharitis (5.43 %), squint (3.66 %), amblyopia (2.87 %), sty (2.40 %), ptosis (1.67%), colour blindness (1.15 %), and posterior segment pathologies (0.19%). In urban areas, the most common cause was refractive error (26.19 %), followed by squint (2.78 %), amblyopia (1.91 %), vitamin A deficiency (1.91 %), blepharitis (1.83 %), colour blindness (1.21 %), sty (0.70 %), ptosis (0.35 %) and posterior segment pathologies (0.08 %). The difference was statistically extremely significant with $p = 0.0001$. Refractive error was the most common ocular morbidity in both urban and rural areas, but Vitamin A deficiency and blepharitis were more common in rural areas. In rural areas malnutrition seems to be the major cause of ocular morbidity while more use of gadgets and less outdoor activity seems to play vital role in urban areas.

KEYWORDS

Ocular Morbidity, Refractory Errors, Squint, Amblyopia, Vit. A Deficiency

INTRODUCTION

A cross-sectional prospective study was done among a total of 2105 school going children (rural - 956 and urban - 1149), 6-16 years of age in rural and urban areas. A comprehensive ocular examination was done with the help of torch light, slit lamp and +90 D and direct ophthalmoscope to examine the anterior & posterior segment pathologies.

MATERIAL AND METHODS

A cross-sectional prospective study was done among 2105 school going children (rural - 956 and urban - 1149) of age 6-16 years, in rural and urban areas over a period of 1 year. The students were screened with the help of Snellen's, E-chart, Ishihara chart. Any child having visual acuity of 6/9 or worse improving with the pinhole was examined for refractive error. Any child of vision $\leq 6/12$ not improving with pin hole was undergone retinoscopy followed by subjective refraction at LLRH hospital, Kanpur. Simple corneal light reflex, ocular movements, cover-uncover, test was done for detection of squint. A comprehensive ocular examination was done with the help of Torch light, Slit lamp and 90D and direct ophthalmoscope to examine the anterior and posterior segment pathologies. All the children between 6-16 yrs. of age in the selected schools was examined for ocular morbidity. Prevalence of ocular morbidity like refractive errors, vitamin A deficiency, trachoma, ocular trauma, blepharitis, sty, conjunctivitis, chalazion, cataract, squint, corneal diseases, congenital disorder, colour blindness, pterygium, amblyopia and posterior segment pathologies. Data was analysed using Statistical Package for the Social Sciences (SPSS) Version 19. Comparison of the discrete variables were evaluated and significance was shown as p value ($p < 0.05$) by using Fischer's Exact Test.

RESULTS

The overall prevalence of ocular morbidity was found to be 81%. Overall Prevalence of ocular morbidity in school going children age 6-16 years in rural and urban areas was 38.81 %. In urban area the most common refractive error was myopia (13.23 %) followed by compound astigmatism (5.74%), simple astigmatism (3.65 %), hypermetropia and least mixed astigmatism (0.35 %). The prevalence of refractive error in rural area was 15.9 % in which myopia (7.32 %) followed by compound astigmatism (3.66 %), simple astigmatism (2.56 %), hypermetropia (2.24 %) and mixed astigmatism (0.10 %). In

study prevalence of ocular morbidity in students was 11.58 %. The prevalence was more in Municipal Corporation School (7.35 %) while in Private English medium school it was 4.24% amongst total Students.

DISCUSSION

The present prospective study was done among a total of 2105 school going children of age 6-16 years in rural and urban areas to determine the prevalence of ocular morbidity in school going children along with its correlation with age and sex. From this study it was seen that the overall prevalence of ocular morbidity in the school children ages 6-16 yrs. of rural and urban areas was 38.82 % i.e. 817 out of 2105. In rural area 414 and in urban area 403 were diagnosed as ocular morbidity. Thus, the prevalence in rural area 43.30 % was much higher than that of urban area 35.07 % and it was statistically extremely significance $p = 0.0001$. Various other studies in India showed higher prevalence like Rajesh Kumar et al. In their study observe that the prevalence of ocular morbidity was 24.6 %. Madhu Gupta, Bhupinder P Gupta et al. observed that the overall prevalence of ocular morbidity among school children of age 6-16 years was 31.6 %. Higher prevalence of ocular morbidity was seen in the study at Kathmandu valley, Nepal by Rajesh Kishore Shrestha, et al. as 34.2 % in age group of 5-16 years. But lower prevalence of 19.9 % was seen by Ayanniyi A et al. Study done on 277 pupils at Ilorin. Similar results were also seen in study by Deshpande Jayant D et al. showing 27.65 % as ocular morbidity. Among ocular morbidity refractive error was the most common cause in both the rural and urban children. The prevalence of refractive error in urban children (26.19 %) was much higher and statistically significant ($p < 0.0001$) than the rural children (15.9 %). Females were affected more in urban areas along with higher percentage of refractive error seen in age group 11-16 years. In refractive errors of urban school children myopia was most common (13.23 %) followed by compound astigmatism (5.74 %), simple astigmatism (3.65 %), hypermetropia (3.22%) with least of mixed astigmatism (0.35 %). The same pattern followed in rural children also with myopia being the most common (7.32 %) followed by compound astigmatism (3.66%) and mixed astigmatism being the least one (0.10 %). Hypermetropia was more common in age group 6-10 yrs. Similar results were seen in study conducted by Naik Ret al. who found Refractive errors (7.57 %) constitute the major cause of ocular morbidity, myopia being the commonest refractive error. In study done

by Ghosh S, Mukhopadhyay U et al, 14 Refractive error was seen in 14.7%. Myopia and hypermetropia was present in 307 (11.9%) and 65 (2.5%) children, respectively. A study by Dandona R, et al¹⁵ found that refractive error was the cause in 61% of the total eyes with visual impairment. A gradual shift to lesser positive values as age progresses was noted. Myopia was present in 4.1 % of the total value. Hypermetropia in 0.8 % of the total. 70 % of the children benefited from wearing spectacles. The results of the present study were quite similar to the study by Rajesh Kishore Shrestha, et al¹¹ that showed refractive error being the most common ocular morbidity (21.8 %). Simple myopia (10.1 %) was the commonest followed by compound astigmatism (4.6 %) and the least common was mixed astigmatism (0.3%). Pavithra MB et al¹⁶ found that prevalence of refractive error in age 7-15 years of school children was 7.03 %. Myopia being the most common (4.4 %), followed by astigmatism (1.6 %) and hypermetropia (1.03 %).

CONCLUSION

Refractive error was the most common ocular morbidity in both urban and rural areas, but Vitamin A deficiency and blepharitis were more common in rural areas. In rural areas malnutrition seems to be the major cause of ocular morbidity while more use of gadgets and less outdoor activity seems to play vital role in urban areas. Improving the diet, hygiene and education in rural areas may help in decreasing the overall ocular morbidity in rural areas. Whereas, in urban areas increasing outdoor activities, proper reading habits and decrease in gadgets use may help in decreasing ocular morbidities in these areas. Proper health education to parents as well as regular eye check-ups are essential to prevent and early diagnose ocular disease in children.

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