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Research Article

Prevalence of Myopia in School Going Children at Rapti Eye Hospital

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Abstract

Objective: A growing public health concern among school - age children is myopia. Myopia prevalence varies by geographic region, race, ethnic group and socioeconomic status. The purpose of this study was to find out prevalence of myopia in school going children at Rapti Eye Hospital, Tulsipur Dang, Nepal. Only tulsipur city's schools students were taken for the study.

Materials And Methods: A cross-sectional descriptive research was conducted. Vision test was done using snellen's chart. Refractive error was determined through Retinoscope. Age group was taken between 4-18 years (upto 10th standards).

Results: Random students were taken who came at Rapti Eye Hospital for eye check up. Total 200 students from different schools of Tulsipur city were picked up. Out of which 87 were male and 113 were female. The refractive errors were found in 62 students (121 eyes). There were 37 students (72 eyes) who had myopia identified. Compared to male, there were more female than male. Prevalence of myopia in this study was 18.5%. Prevalence of myopia in male was 8.5% and in female 10.0%.

Keywords: Rapti Eye Hospital; Myopia; Children

Introduction

Myopia is a type of refractive error in which, while the eye is at rest, parallel light rays focus in front of pigment layer of retina. This possibly as a result of anatomical difference in the form of the corneal or lens curvatures, or the eyeball. Myopia or short-sightedness is becoming more and more prevalent. Nearly half of the world's population prone to have poor vision by the year 2050, according to study suggests [1].

The most frequent refractive defect is myopia. According to estimates, 90% of some east Asian populations suffer from myopia. Children's myopia normally progresses, and high myopia can develop early in the course of early myopia [2].

Myopia, particularly high myopia (-6.00 diopter or more), increase the risk of dangerous eye conditions, such as glaucoma and cataract addressing the underlying causes of myopia maculopathy, retinal detachment and optical distortion does not stop the development of pathology [3].

Myopia (short-sightedness or near sightedness) can be treated with eyeglasses, contact lenses, and refractive surgery. So, it is frequently thought of as a benign illness. WHO acknowledges myopia, albeit not totally, (uncorrected or inadequately corrected refractive error) is a significant factor in visual impairement [4].

Materials and Methods

For this study age group was taken between 4 to 18 years (upto 10th standards). 200 students that were enrolled in school participated in the current investigation. 87 male and 113 female student were included in this study who were chosen at random. Snellen's chart was used for the distance visual acuity. The

conventional near vision chart was used for the near vision test, which was conducted 33 cm away. Refractive error was determined through Retinoscope.

Results

The study group included 200 school going students (<1-10th Grade) aged 4-18 (11.5 ± 10.60) out of which 87 were male and 113 were female. Refractive error was found in 121 eyes of 62 students (36 female and 26 male). 37 students (72 eyes) had myopia. 24 students (44 eyes) had mild myopia, 15 students (26 eyes) had moderate myopia and 1 student (2 eyes) had high myopia. 7 students (10 eyes) had hypermetropia. 5 students (8 eyes) had mild hypermetropia and 2students (2 eyes) had moderate hypermetropia. Likewise, 22 students (39 eyes) had astigmatism. 6 students (11 eyes) had simple myopic astigmatism, 14 students (25 eyes) had compound myopic astigmatism, 2 students (2 eyes) had mixed astigmatism and 1 student (1 eye) had simple hyperopic astigmatism. 141 students (279 eyes) were found to be emmetropic. The prevalence of myopia was found to be 18.5%. Myopic prevalence was higher among female (10%) as compared to male (8.5%).

The below bar graph shows the data distribution on the basis of refractive error (Bar-graph 1)and data breakdown of myopia (Bar-graph 2).

Bar-graph 1: Data distribution on the basis of refractive error.

Bar-graph 2: Data breakdown of myopia.

The following pie-charts show the data distribution on the basis of gender (Chart 1), age (Chart 2) and grade (Chart 3).

Chart 1: Data distribution on the basis of gender.

Chart 2: Data distribution on the basis of age.

Chart 3: Data distribution on the basis of grade.

Discussion

In a recent study conducted at Rapti Eye Hospital for the prevalence of myopia in school going children was found 18.5%. 200 students were selected randomly from different schools of tulsipur city where 87 were male and 113 were female. Age group was taken between 4 to 18 years. Refractive error was found in 62 students (121 eyes), 36 female and 26 male.

37 students (72 eyes) had myopia. 24 students (44 eyes) had mild myopia. 15 students (26 eyes) had moderate myopia. 1 student (2 eyes) had high myopia.

7 students (10 eyes) had hypermetropia. 5 students (8 eyes) had mild hypermetropia. 2 students (2 eyes) had moderate hypermetropia.

22 students (39 eyes) had astigmatism. 6 students (11 eyes) had simple myopic astigmatism. 14 students (25 eyes) had compound myopic astigmatism. 2 students (2 eyes) had mixed astigmatism. 1 student (1 eye) had simple hyperopic astigmatism.

141 students (279 eyes) were emmetropic.

Prevalence of myopia was 18.5% where female were 10% and male were 8.5%. Compare to male and female, female had higher percentage than male.

In gender wise distribution, female were 57% and male were 44% myopia.

In age wise distribution, 4 to 7 years of age have 12%, 8 to 11 years of age have 40%, 12 to 15 years of age have 48% and 16 to 19 years of age have 1% of myopia. In compare to age 12 to 15 years of age have higher percentage.

In grade wise distribution, less than 1 were 5%. 1 to 5 were 40%. 5 to 10 were 55% [5-11].

Conclusion

School children from 9 to 18 have been discovered to be affected by myopia; the age group with highest frequency was that of 12 to 15 years old. Female impact was greater than male.

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