Journal of Advances and Scholarly Researches in Allied Education
Vol. 19, Issue No. 1, January-2022, ISSN 2230-7540

Study of School Eye Survey Conducted in Rural Areas of Jalandhar (Punjab), India

Navdeep Gupta[1*], Dr. Saurabh Mishra[2]

[1] Research Scholar, Sunrise University, Alwar, Rajasthan

[2] Assistant Professor (Zoology Dept.), Sunrise University, Alwar, Rajasthan

Abstract - In order to determine the prevalence of refractive errors and the pattern of ocular morbidity among the school children of a rural village, the purpose of this study was to gather this information. A cross-sectional study was conducted on children aged 4 to 15 years old in a rural village -Damurdarpur, Jalandhar(Punjab). The location of the study was in India. Every child was given a full eye exam, which consisted of retinoscopy, refraction under cycloplegia, and a measurement of the child's visual acuity using Snellen's E chart. In addition to that, the anterior segment, the media, and the fundii were all examined. Myopia was defined as a spherical/cylindrical equivalent refractive error of at least -0.50 D, and hypermetropia was defined as having a refractive error of +0.50 D or more . The survey involved the examination of 220 eyes belonging to 110 children, the majority of whom were in the age range of 5 to 10 years old. There were 85.40 percent of people who had a prevalence of uncorrected visual acuity of 6/6.

Keywords - Retinoscopy , Hypermetropia , Refractive Error , Morbidity ,Cycloplegia , Visua Acuity.

----------X----------

INTRODUCTION

The fact that 30 percent of India's population goes blind before the age of 20 years and that many of those people are under the age of five when they go blind emphasises the significance of early detection and treatment of ocular diseases and visual impairment in young children. When child screening is included, a programme for the prevention of blindness is considered to have reached its full potential. Children who are currently enrolled in schools constitute an important and sizable target group because they are not only simple to approach but also receptive to the health education that is provided (Desai et al 1989). It is possible to gauge the level of development of eye care services in a nation by looking at the percentage of children who suffer from some form of visual impairment or blindness as a result of refractive errors. Our school eye health survey was implemented with the purpose of preventing blindness in school-aged children through the early detection and treatment of visual defects and eye health problems in school-aged children, as well as the incorporation of elements of health education into the survey. The purpose of this paper is to describe the key aspects of our programme as well as the findings of our cross-sectional study, which was conducted in order to determine the ocular morbidity pattern in school-aged children living in the village of Damurdarpur, Jalandhar(Punjab).

The term "childhood blindness" refers to a collection of diseases and conditions that manifest themselves during childhood or the early years of adolescence. If these diseases and conditions are allowed to progress unchecked, they can cause severe vision loss or blindness, both of which are likely to be untreatable in adulthood. 1,2 Students in educational institutions make up an important and sizable target population that needs to be properly screened in order to detect eye diseases in their early stages and avert the onset of blindness. The World Health Organization's 'VISION 2020-The Right to Sight' programme has identified the prevention of childhood blindness as one of its top priorities. 3 If children's vision problems are not addressed and treated, this can lead to a worsening of the condition over time as well as a loss of vision that is permanent. There is a strong correlation between many of the factors that lead to blindness in children and the risk of death in children (e.g. premature birth, measles, congenital rubella, vitamin A deficiency and meningitis). Therefore, accurate and timely diagnosis of these conditions can contribute to increased chances of a child surviving. The World Health Organization (WHO) established the criteria for blindness as having a visual acuity of less than 3/60 or a corresponding visual field loss of less than 10 degrees in the better eye while using the most effective form of corrective lenses. 4 The World Health Organization estimates that there are 1.5 million blind children across the globe, with 1.0 million of them living in Asia, 0.3 million in Africa, 0.1 million in Latin America, and the remaining 0.1 million living in other parts of the world.

Around the world, there are approximately 1.4 million blind children, the majority of whom are found in less developed countries. There is no one cause of childhood blindness; the factors that contribute to it vary by region, level of socioeconomic development, and the availability of health care. 5 In India, it was reported that there was a prevalence of 0.17 percent for childhood blindness. 6 population-based studies were conducted in India, and the results indicated that the prevalence of uncorrected visual acuity among children aged 7-15 years ranged from 2.7 percent in rural areas to 6.4 percent in urban areas. It was reported that the prevalence of best corrected visual acuity of 20/40 or worse in the rural population was 0.78 percent, while the prevalence in the urban population was 0.81 percent. 7 Steinkullar8 estimated that approximately 5 percent of blindness in the world was caused by children who were younger than 15 years of age. Blindness in children has a prevalence that ranges from approximately 0.3 per 1000 children in wealthy regions of the world to 1.2 per 1000 children in poorer countries or regions. This variation in prevalence can be seen across the globe. 9 Parents' perceptions and levels of awareness of children's eye diseases in Chennai, India were reported by Senthilkumar et al10, who came to the conclusion that one of the prerequisites for health-seeking behaviour is knowledge of diseases and the symptoms of those diseases.

Children who are visually impaired have a diminished contribution to make to the economy. 11 In addition to this, this can have a significant adverse effect on the individual's educational opportunities, personal growth, and future economic productivity. In regions of the world that are poorer or less developed, there is a shortage of resources and educational support, so the impact of this is greater, and the consequences are more severe. The difficulties and suffering that are caused by poor vision or blindness in childhood are compounded greatly by the fact that those affected are often unable to participate fully in the activities of daily life.

In any population, the occurrence of childhood blindness due to a variety of causes that are both preventable and treatable is evidence that eye care services are lacking in that population.

12 Because of all of these factors, it is of the utmost importance that efficient methods be developed in order to get rid of the causes of childhood blindness that can be avoided or treated. School eye health programmes have become the focal point of many of the strategies that have been developed to improve the eye health of children during the formative years of their lives. After cataract surgery, the National Program for Control of Blindness in India's School Eye Screening Program is the second largest programme for preventing blindness in the country. 13 Ophthalmic assistants and ophthalmologists have traditionally been the individuals responsible for conducting vision screenings on school-aged children. There is a significant lack of trained personnel in the eye care industry. In India, there is one ophthalmologist for every 20,000 people living in urban areas and one for every 200,000 people living in rural areas. In a similar vein, one ophthalmic assistant serves every 200,000 people in the population. 14 Due to the higher concentration of ophthalmologists in urban areas, a sizeable portion of the population that resides in rural areas does not have access to services that are of a sufficient standard. 15

MATERIALS AND METHODOLOGY

Students between the ages of 4 and 15 who attended schools in the village of Damurdarpur, in the state of Punjab in India were chosen to participate in the survey. A basic torch light eye examination was performed by a team from the Institute of Ophthalmology at Punjab Institute of Medical Science.This team consisted of five ophthalmologists, a refractionist, and two ophthalmic technicians. They tested the patient's distance visual acuity, colour vision, ocular motility, and performed cycloplegic refraction if it was necessary. The ophthalmic technician measured the patient's visual acuity at a distance of 6 metres using a Snellen chart with Hindi optotypes and an E-type chart. The result was recorded as the smallest line that could be read with one or no errors. After examining the right eye, the examination moved on to the left eye. The Ishihara chart was used to record people's colour vision. The ophthalmologists performed an examination of the anterior segment, which included the examination of the eyelid, conjunctiva, cornea, iris, and pupil.

Only the patients who had visual acuity of less than 6/6 in either eye were given a drop of cyclopentolate solution that was one percent strength in order to dilate their pupils. After waiting thirty minutes, a third drop was put in the patient's eye if the pupillary light reflex had not subsided.

It was determined that the patient had complete cycloplegia if their pupils were dilated and there was no papillary light reflex.

Following the administration of cycloplegia, a refractionist examined the patient's fundus and performed a vision test utilising a streak retinoscope. Patients who had a refraction error were asked to report to the hospital for further testing after they had undergone mydriasis. At the conclusion of the examination, the patients who required medication were given their prescriptions.

RESULTS

There were a total of 110 children investigated, 60 of which were male (54 percent), while the remaining 50 were female (46 percent).Participants in the survey ranged in age from 4 to 14 years. The standard deviation of the mean age was 3.2 years. The majority of the children were in the five to ten year age range. In 188 of the participants' eyes, the uncorrected visual acuity measured at 6/6. (85.40

percent). 6.81 percent of eyes were found to have refractive errors in the children who were diagnosed with vision impairment. Myopia and hypermetropia were the most common types of refractive errors, each accounting for 26.67 percent of the total number of refractive errors. An anisometropic form of amblyopia was diagnosed in one child. The percentage of people who had myopic astigmatism was 33.33, and the percentage of people who had compound astigmatism was 13.33.

Blepharoconjunctivitis and blepharitis were present in 34 (15.45%) of the eyes, while Bitot's spots were present in only 2 (0.90%) of the eyes. In addition to other conditions, one eye had a foreign body made of iron, another eye had congenital dacryocystitis, and the other two eyes did not have allergic conjunctivitis. One of the children tested positive for having colour blindness.

DISCUSSION

This survey was carried out in a very underdeveloped rural region of India, and the results shed light on the circumstances facing the children living there. In contrast to the urban area, the majority of the population in the village of Damurdarpur was illiterate and lived in conditions with few resources and facilities. Children go to school not for education but for the midday meal; as a result, even a small number of students in the second standard were unable to read the Snellen chart (local language optotype). The disease or condition of their children was neither known to the parents nor was it a source of concern for them. The majority of patients seeking treatment for diseases not related to the eye go to quacks. Out of a total of 110 children, 8 did not have adequate colour vision or the ability to interpret the Snellen chart. Myopia was found to be the most prevalent form of the refractive errors, followed by hypermetropia and then astigmatism. Even though there was a significant need for corrective lenses, nobody in the village wore eyeglasses.

Inadequate vision in childhood can have a detrimental effect on a child's academic performance as well as their overall development and sense of maturity.

In addition, the majority of children do not realise that they are affected by the ocular disability because they adapt in a variety of ways to compensate for their poor eye sight. They accommodate for their poor vision by moving their seats closer to the chalkboard or by bringing their textbooks up to their faces. Additionally, they might scrunch up their eyes. They might also have a tendency to avoid doing any work that requires visual concentration, which would have a negative impact on their performance (Murthy et al 2002). No ophthalmological examination had ever been performed because the necessary facilities were never made available. There was a high incidence of blepharo-conjunctivitis and blepharitis among children as a direct result of the prevalent unhygienic conditions. In point of fact, blepharitis was the leading contributor to the prevalence of ocular morbidity. Because the majority of eye diseases that are found are either preventable or treatable, it would seem that developing countries would benefit from an eye screening and intervention programme that is implemented in schools and includes regular evaluations (Nepal et al 2003).

Young children who have vision problems rarely show obvious symptoms, unless the problem is severe. Exceptions include when the defect is gross.

This issue could be solved by administering a dependable eye exam to each and every child very early on in their educational career.

According to Khan et al. (2005), the widespread use of illiterate E should make it possible to conduct reliable vision tests at the age of 6 years.

As the harvesting season was going on, many children didn't show up for the check up, so this survey only showed the tip of the floating iceberg in terms of its findings.

REFERENCES

Dandona R et al (2002). Refractive error in childrenin a rural population in India. IOVS; 43(3):615-22.

Desai S, Desai R, Desai NC, Lohiya S, Bhargava G,Kumar K (1989). School eye health appraisal. IndianJ Ophthalmol; 37:173-175.

Khan AA, Nasti AR, Dar MA, Lone S.A (2005).

Prevalence of refractive errors in school children;JK-Practitioner; 12(3):156-159.Murthy GVS. et al (2002). Refractive error inchildren in an urban population in New Delhi. IOVS;43(3):623-31.

Nepal B P, Koirala S, Adhikary S, Sharma A K(2003). Ocular morbidity in school children inKathmandu. Br J Ophthalmol; 87:531-534.

Clinical Refraction Guide Paperback – 1 January 2019 by AjayKumar Bhootra (Author)

Publisher : ; Jaypee Brothers Medical Publishers (2019 January 1) Second edition

Language : English

Paperback : pages 144

ISBN-10 : 9352708628

ISBN-13 : 9352708628-978

Recent Advances in Ophthalmology 15 Paperback – 1 January 2022 by HV Nema (Author), Nitin Nema(Author)

Language : English

Paperback : pages 266

ISBN-10 : 9390595851

ISBN-13 : 9390595853-978

Myopia. Optics. Clinical Presentation and Management (Eye and Vision Research Developments) Hardcover – Import, 1 June 2014 byProfessor Dieudonne Kaimbo Wa Kaimbo (Author).

Publisher : st edition1 ; Nova Science Publishers Inc (2014 June 1)

Language : English

Hardcover : pages 431

ISBN-10 : 1631175068

ISBN-13 : 1631175060-978

Diagnostics in Ocular Imaging: Cornea, Retina, Glaucoma and Orbit Hardcover – Import, 14 November 2020 by Mehrdad Mohammadpour (Editor).

Publisher : 14) edition 2021 .st ed1 ; Springer (2020 November

Language : English

Hardcover : pages 752

ISBN-10 : 3030548627

ISBN-13 : 3030548629-978

Corresponding Author

Navdeep Gupta*

Research Scholar, Sunrise University, Alwar, Rajasthan