

Prevalence and Pattern of Eye Diseases in ONE Elementary School Children, A Cross Sectional Study

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Abstract: Vision is very important for a child's development during infancy and early childhood and later on for learning and communications. Almost three-fourth of a child's early learning is acquired through vision. In this study we were focusing to determine eye diseases in an elementary school in Taif city, western region of Saudi Arabia. We have conducted a cross-sectional short study on Alandalous private elementary school children for screening for eye diseases in general, which is a part of our evaluation in Family Medicine module in college of medicine, Taif university. In November-2015. The study included 118 male students throughout all academic elementary years from 1st to 6th. Their age ranges from 6 to 13 years old. The need for visual screening is important because in this study there was a relatively large percentage of students with decreased visual acuity that they don't know they have a problem which may lead to problems to their academic level and learning ability and thus an affection them and their family's emotional well-being that can be prevented only by visual screening and then correction of their vision.

Keywords: elementary school children, students, Eye Diseases, Medicine.

1. INTRODUCTION

Vision is very important for a child's development during infancy and early childhood and later on for learning and communications. Almost three-fourth of a child's early learning is acquired through vision. Hence, visual impairment in early life has a major negative impact on children's growth and development leading to delay in the ability to learn properly, or the ability to read what is written on the board when the teacher writes, hence a decrease in the academic outcome and then an affection of the child's emotional well-being. Therefore, preventing visual loss or allowing a visually impaired child to have the correct treatment and restoration of vision at the right time will have paramount importance on the child's growth and development. The impact of eye diseases and visual impairments in children also extend beyond the children themselves to the family and society-some studies have shown that having a disabled child can increase stress and depression among parents and can lead to an increase in divorce (1).

There are an estimated 19 million children worldwide with visual impairment of whom 1.26 million are bilaterally blind. The causes of childhood eye diseases resulting in visual impairments in developing countries differ from those in developed countries. In general, infections and malnutrition are the common causes of visual impairment in children in developing countries whereas optic nerve lesions, retinal disorders and hereditary factors are the main causes in developed countries. Of those who are blind, two-third live in developing countries and about half of them die within 1–2 years of becoming blind (2–4).

In a school-based screening for ocular abnormalities and low vision in children of Butajira Town showed refractive errors as the leading causes of low vision and there were one or more ocular abnormalities in 62% of the students (5).

In this short study (a project required to be done in Family Medicine module) we are focusing to determine eye diseases in an elementary school in Taif city, western region of Saudi Arabia.

2. METHOD

We have conducted a cross-sectional short study on Alandalous private elementary school children for screening for eye diseases in general, which is a part of our evaluation in Family Medicine module in college of medicine, Taif university.

In November-2015. The study included 118 male students throughout all academic elementary years from 1st to 6th. Their age ranges from 6 to 13 years old.

Our questionnaire included 2 main domains, subjective and objective screening for eye diseases, and was reported by personal interview from the researchers.

The subjective part concerns about taking a focused history on eye diseases including visual disturbance like myopia, blurring of vision, diplopia and whether or not they wear glasses, it also includes questions if students have eye allergy, infection symptoms, eyelid swelling, nasolacrimal duct obstruction, or eye trauma either blunt or sharp, it also includes questions on family history for any of the above mentioned eye disorders. The subjective part also included a question that tests the ability of the child to act properly when they have a chemical injury to the eye, they were given 4 options to choose (scream and wipe it off with a piece of tissue, scream and wash it off with water, bear and never tell anyone, don't know what to do)

The objective part concerns about examination of the eye by the researchers who are trained medical students. The examination included 3 main parts, external eye inspection (eyelid for redness-blepharitis-, swelling, stye, chalazion and pallor, sclera and conjunctiva for congestion –eg. Conjunctivitis- and subconjunctival hemorrhage, and nasolacrimal duct for obstruction). The second part was to examine eye globe alignment which included two types of examination, corneal light reflex and extra-ocular muscle movement for any abnormality to be determined in early childhood to prevent the occurrence of lazy eye –Amblyopia-. The third part was to examine visual acuity using the Snellen chart for both right and left eyes.

Consent was taken from the school principal 3 days prior to this screening and was held in the optimal place and condition provided by the school.

3. RESULT

Visual acuity:

Of 118 elementary school students we included in the survey, visual acuity abnormalities (refractive errors) was the most common abnormality in the screening with 42 students (35.6%) of them have decreased visual acuity, 28 student (66.6%) of them don't know that they have decreased vision, however, only 14 (42.8%) of those having decreased visual acuity have eyeglasses to correct their myopia, some of them report that they frequently forget and keep their eyeglasses at home (4 students). Most of those with uncorrected visual abnormalities report that they still can't read everything the teacher writes on the board and also report that this affects their academic performance in terms of participation in the class.

Eye abnormalities:

Of the 118 students, 4 of them had eyelid swelling, 27 (22.8%) have some sort of eye allergy to food –eg. panama , eggs) or cattle, 3 had nasolacrimal duct obstruction, 4 students had unilateral eye alignment abnormality (squint), one student had diplopia in the past that had been surgically corrected and now he has normal vision, of the 118 students 32 reported some sort of eye trauma (laceration, chemical injury or blunt trauma) in their life, also 6 students reported a relative with myopia and 1 a relative with diplopia represented by squint.

Testing children on their ability to act properly when they have an eye emergency (Chemical injury-COLOROX cleaner- in this screen): (Table1) and (Figure1)

Of the 118 students answered this question:

22 students answered: I scream and wipe my eyes off with tissue.

68 students answered: I scream and wash my eyes off with water.

Only 9 of them answered: I bear and never tell anybody.

19 of them answered: I don't know what to do. (those who answered this question were relatively younger, only 2 students in the 5th and 6th grade answered this question).

Table 1

grade	Answer 1	Answer 2	Answer 3	Answer 4
1 st and 2 nd	6	14	4	7
3 rd and 4 th	9	32	3	5
5 th and 6 th	7	22	2	7
Total	22 (18.6%)	68 (57.6%)	9 (7.6%)	19 (16.1%)

What to do when you have a chemical eye injury (CLOROX cleaner to your eye) - children aged 6-13 years old answers. Answer1= scream and wipe off with tissue, Answer2= scream and wash off with water, Answer3= bear and no tell anybody, Answer4= don't know what to do.

4. DISCUSSION

The target population in this study was elementary schoolchildren because children usually start school at approximately 6 years old and spend 9 years in basic schools. Refractive error was the most common and therefore most important cause of defective vision. the refractive error in our study was 35.6% in a sample included 118 student and that is consider high .we found 4 student have spectacles but they do not wear them . Barriers to wearing spectacles include parental unawareness of visual defect, high cost, and concern that wearing spectacles may cause progression of refractive error.

The most common and therefore most important eye problem leading to visual impairment in the students was refractive error. Squint and amblyopia were rare. This study provides information of public health importance regarding the need for refractive correction.

we need more frequent eye examination in school children and education to the teachers how to do basic eye examination and to the children with their families on the importance of wearing the eyeglasses and what to do in eye emergency like chemical contamination to the eye specially to those who are younger -1st and 2nd grade-

the need for visual screening is important because in this study there was a relatively large percentage of students with decreased visual acuity that they don't know they have a proble which may lead to problems to their academic level and learning ability and thus an affection in their and their family's emotional well-being that can be prevented only by visual screening and then correction of their vision.

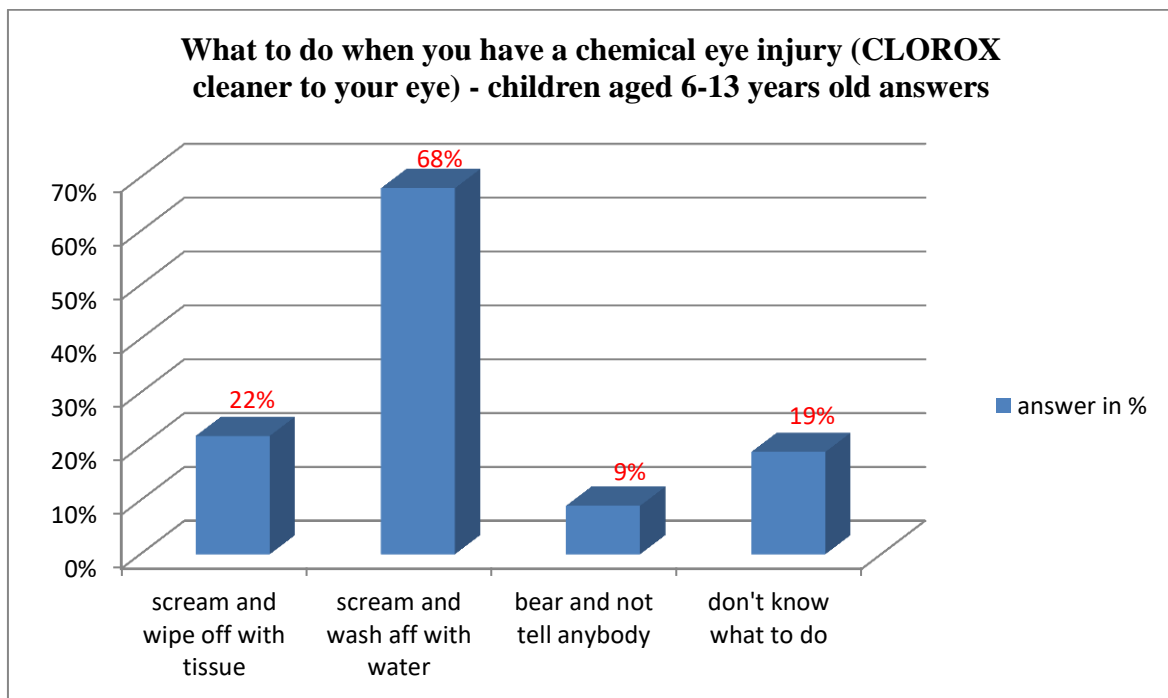


Figure 1

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