

## ORIGINAL ARTICLE

# A STUDY OF VISUAL PROBLEMS IN CHILDREN SCORING LOW GRADES AND THOSE WITH LACK OF CONCENTRATION AT SCHOOL IN PUNE CITY

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## ABSTRACT

**Background:** A good vision is important for a student to reach his/her full academic potential. Roughly 80 percent of what a child learns in school is information that is presented visually, hence good vision is essential.

**Methodology:** The present study was a cross-sectional study conducted on 100 children within the age group of 5 to 10 completed years and scoring low grades at school exams. The study was conducted with the help of predesigned semi-structured questionnaire which was to be filled by parents. The selected students also undergone vision testing, Colour vision testing, refractive errors, Anterior and Posterior segment examination, squint evaluation by us.

**Results:** Out of the 100 children, 35% children were without any eye problem whereas 65% children showed some kind of vision related problem. It was seen that 55% boys had vision problems compared to 45% in girls. The major visual problems are allergic conjunctivitis (15%), Myopia (22%), convergence weakness (22%), squint (4%) and hypermetropia (4%). Roughly 60% parents were aware about some vision problem in their child.

**Conclusion:** Of 100 students with low performance in our study, 65% had treatable visual problems. The low performance can be attributed to the low vision but long term follow up is needed to see the improvement in scores and studies.

**Key words:** visual problem, school children, low grades

## INTRODUCTION

A good vision is important for a student to reach his/her full academic potential. Roughly 80 percent of what a child learns in school is information that is presented visually, hence good vision is essential.<sup>1</sup>

Children may suffer from myopia, hypermetropia or astigmatism which are refractive errors. These can be corrected with eye glasses or contact lenses. Deficits of functional visual skills can cause blurred or double vision, eye strain and headaches that can affect learning.<sup>2</sup> Convergence insufficiency is a specific type of functional vision problem that affects the ability of the two eyes to stay accurately and comfortably aligned during reading. Visual perception includes understanding what you see, identifying it, judging its importance and relating it to previously stored information in brain.<sup>3</sup> Colour blindness can also cause problems if colour matching or identifying specific colours is required in classroom activities. For this reason, a colour blind examination should be done prior to starting school.<sup>4</sup>

The U.S. Individuals with Disabilities Education Act (IDEA) says learning disabilities do not include learning problems that are primarily due to visual, hearing or motor disabilities.<sup>5</sup> Mental retardation and emotional disturbances are also excluded as learning disabilities, along with learning problems related environmental, cultural or economic disadvantage. But specific vision problems can contribute to a child's learning problems, whether he has been diagnosed or not diagnosed as a "learning disabled". In other words, a child struggling in school may have a specific learning disability, a learning related vision problem or both.<sup>6</sup>

Early recognition and referral to qualified professionals for evidence based evaluations and treatments are necessary to achieve the best possible outcome. The present study was conducted with an objective to identify children with learning disabilities or those with poor grades in school by means of a questionnaire and subject them for eye examination and evaluate which ocular problems are predominant in that group.

## MATERIALS AND METHODS

The present study was a cross-sectional study conducted on 100 children within the age group of 5 to 10 completed years. The study was conducted with the help of predesigned semi-structured questionnaire which was to be filled by parents. The students which were selected for the study were those who scored low grades at school exams. The selected students also had undergone vision testing, Colour vision testing, refractive errors (myopia, hypermetropia, and astigmatism), Anterior and Posterior segment examination, squint evaluation by us. Children with the known history of suffering from Attention Deficit Disorder, Attention Deficit Hyperactivity Disorder, Dyslexia and Learning disabilities were also included in the study. This was done to conclude whether poor performance was due to vision problems or other learning disability. Children above 10 years and less than 5 years of age, without valid consent and scoring high grades at school are excluded from the study. The study was conducted in June-July 2014. The Institutional ethics committee clearance was undertaken before beginning the study.

## RESULTS

Out of the 500 questionnaire which was distributed in the school to be filled by parents and teachers, 130 children were evaluated as slow learners. Among these 130 students, 100 turned at the OPD of our hospital of ophthalmic examination. This indicates lack of awareness or interest in parents. The eye problem of the participants is as shown in table 1.

**Table 1: Proportion of students having visual problems (n=100)**

Eye problem	Number
Normal	35
Allergic conjunctivitis	15
Myopia	22
Convergence weakness	22
Squint	4
Hypermetropia	2

Out of the 100 children, 35% children were without any eye problem whereas 65% children showed some kind of vision related problem. Selection of children for eye examination was based on the questionnaire. About 65% were selected on the basis of question filled by the parents and remaining 35% by the help of information provided by the questionnaire filled by teachers. It was seen that 55% boys had vision problems compared to 45% in girls. Roughly 60% parents were aware about some vision problem in their child.

## DISCUSSION

During ophthalmic examination, 63 children gave vision on Snellens chart, 12 gave on Kay picture chart and the rest were not co-operative for vision. A total of 22 myopes were found of which 17 were using spectacles already but 6 of which were old glasses. Four children were given spectacle correction. A very high percentage of children suffering from allergic conjunctivitis were found in our study (15%) who was irritable and constantly rubbing their eyes which led to lack of concentration. They were treated with anti-allergic and lubricating eye drops. Four children suffering from squint were given spectacle correction and one was advised pencil push up exercise. Two children had hypermetropia which was corrected with glasses and occlusion therapy. However the improvement of performance in school needs to be followed up long term. Similar to other studies, the child's IQ score was not taken consideration in our study. Moreover since our study group consisted of normal school children, congenital ocular abnormalities, optic atrophy and nystagmus were not found.

## CONCLUSION

Of 100 students with low performance in our study, 65% had treatable visual problems. The low performance can be attributed to the low vision but long term follow up is needed to see the improvement in scores and studies.

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