

Impact of Myopia Correction on Academic Achievement of VII Std Students



Education

KEYWORDS : Myopia, Refractive Error, Visual acuity, Academic achievement, Control group and Experimental group

Dr. N. Prema

Assistant Professor, Department of Education, SRM University, Kattankulathur
Kanchipuram Dt- 603 203, Tamil Nadu

ABSTRACT

Myopia is an error in refraction of the eye which is also called shortsightedness. The children who have this problem, finds it difficult to view the distant objects. If that child is sitting in the last row, it is not possible for him to see what has been written on the black board. The aim of this investigation is to find out if there is any improvement in students test scores after myopia correction. The investigator has selected VII standard students from two schools in Maraimalai Nagar, Kanchipuram District, Tamil Nadu. Out of 126 students 49 of them are identified as vision defective (all are Myopic only) with the help of Optometrist. Of 49 students, 46 were taken for this study, since the remaining 3 of them were already wearing eye glasses. Twenty six students were interested in wearing glasses, they were considered as experimental group and the remaining twenty students were included in control group. Marks of students in first mid-term were collected and considered as pre test. Only the experimental group students were taken to the hospital and glasses were provided to them as prescribed by the Ophthalmologists. After a period of seven months the marks of all students in third mid-term were collected and considered as post test. Significant improvement was noted by the investigator in the post test marks of experimental group students. It can be inferred that the myopia correction plays a role in test scores of students.

Introduction

Human eye ball has three layers, outer sclerotic, middle choroid and the inner most layer called retina. The light rays entered through cornea of eye and these rays should be exactly focused on the retina. But due to some reason it may be focused in front of the retina or beyond the retina, such state is called Refractive error. If the light rays focused in front of the retina, such condition of eye is called myopia or shortsightedness and if the rays focused beyond the retina, such type of refractive error is called hypermetropia or longsightedness. An undetected vision problem can interfere with learning. If a child is not performing well in school, the teachers and parents should consider child's vision first. While sending the children to the school, the parents concentrates only on paper, pencil, books, lunch and neat uniform. They are not bothering about the child's vision unless and until the problem becomes serious. Kids today are not doing as what we did at this stage. Most of the girl children help in household work and playing outdoor or indoor games. If the child is male, helps in farming and playing outdoor games with friends. But nowadays children are watching television, spending most of the time on computer, video games, and playing games in cell phones etc. Many researchers found that near work activity leads to bad vision. The school years are a very imperative time in every child's life. A child's eyes are constantly in use in the classroom and at play. When his/her vision is not functioning properly, learning any task will also problem for them. Then, they will be wrongly stamped as dim-witted. Periodical vision check up is considered to be the most central process during school age.

Objectives of the study

- To explore the difference if any between pre-test and post-test of control group students in their academic achievement.
- To explore the difference if any between pre-test and post-test of experimental group students in their academic achievement.

Hypotheses of the study

H1- There is no significant difference between pre-test and post-test of control group students in their academic achievement.

H2- There is no significant difference between pre-test and post-test of experimental group students in their academic achievement.

Variables

- Refractive Error
- Academic achievement

Materials and methods

Two groups with per-test and post-test Experimental design was adopted for this investigation. Seventh standard students from two schools in Maraimalai Nagar were selected as sample by adopting convenient random sampling method. Since age 12 is psychologically known as pre adolescence, which is crucial stage many physiological as well as psychological changes takes place. Vision screening was made for 126 with the help of optometrist; as a result, forty nine students were affected by the problem of Refractive Error (Myopia). Three of them were exempted from this study, since they wore glasses. Out of 46, the investigator was able to get authorization from parents of 26 students, who were considered as experimental group and the remaining twenty students were taken as control group. The students of experimental only taken for eye checkup in the hospital and eye glasses were provided as prescribed by the Ophthalmologists. Before wearing glasses the first mid-term marks were collected as pre test and after wearing glasses a period of seven months the third mid-term marks were collected as post test.

Analysis of Data

Collected informations were subjected to statistical analysis such as student 't' test.

Table No.1 't' test for Academic Achievement of control group students before and after a period of seven months

Variables	N	Mean	SD	't' value	Remarks at 1% level
Pre-test	20	51.75	11.09	0.68	NS
Post-test	20	52.50	8.94		

Table No.2 't' test for Academic achievement of Experimental group students before and after seven months of RE correction

Variables	N	Mean	SD	't' value	Remarks at 1% level
Pre-test	26	48.04	10.68	6.38	S
Post-test	26	56.88	12.89		

Results and Discussion

The prevalence of myopia among students is 38.88%. Test scores of control group students in pre test and post test remains the same. But the test scores of Experimental group students in post test are higher than the scores of pre test. **Glewwe et al.**, presented a Research paper on *The Impact of Eyeglasses on the Academic Performance of Primary School Students*: The results

from the first year indicate that, after one year, provision of eyeglasses increased test scores by 0.15 to 0.30 standard deviations (of the distribution of the test scores). The findings obtained by **Mohammed al-Jerafi et.al (2007)** viewed that 54% of the participants suffered from some kind of eye problem. According to them Myopic, hypermetropic and astigmatic students who wore eyeglasses scored better in tests than those who did not, and better than those with good vision. Therefore, correction of those refractive errors appeared to improve the reading ability of those students and, hence, their educational achievement. The present study also confirmed that the Academic performance of the experimental group students has been improved after getting vision correction not the control group students. According to **Sheila M. Williams et.al (2008)** children with hypermetropia had slightly reduced verbal and performance IQ, in comparison with the children without refractive errors.

Recommendations

- Awareness must be created among parents about the consequences of untreated vision problems.

- Periodical vision screening must be made at school for earlier detection of vision problem.
- Food items which are good for vision must be provided to the children and the healthy eating habits among children must be cultivated.

Conclusion

Some children are mislabeled as stupid in schools as well as at home by the parents and siblings. This is a wrong decision taken by them without checking their visual acuity. Any child who has problem in vision, it is difficult for him/her to identify what has been written in black board and he/she will not be able to copy it at the speed of other children. She may feel shy to ask others, then he/she develops inferiority complex and keeps herself away from other friends. Due to such mentality, she may lose interest in studies, and undeniably her academic performances will decline. The present study and other previous researcher's result shows that refractive error correction indisputably makes improvement in academic performance of children to some extent.

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