The gift of sight is one of the most precious possessions. Without good vision our ability to learn about the world become very difficult. Education system views good health as an important influence on how well students achieve the objectives. School learning assumes the effective function of the physical system of the learner and is targeted on a group of healthy children.

Need for the study

Most of the information transmitted in schools is through written and oral communication. Processing of information is dependent therefore on the functioning of the sense organs, that is, the readiness with which the organ can respond to stimuli. Vision problems affect one in 20 pre-schoolers and one in 4 school children in India 6.7 percent of children aged between 10-14 years have refractive errors (Park, 2007). In India, 14 percent of population constitutes school children. In Kerala, 3.46 percent of children were found to have refractive errors. Refractive errors is the commonest cause of blindness after cataract. Since many vision problems begin at an early stage it is very important that children receive proper eye care early itself. Myopia is the commonest refractive error among school children. Reading and writing are the felt needs of children for which good eye sight is required. Impaired vision will result in low academic achievement; vision problems are one of the easiest things to identify and corrective measures are simple. So far there has been no conclusive evidence of research, especially in India, related to refractive errors and academic achievement.

Review of literature

Raju et al (2004) in a study to assess the prevalence of refractive errors in a rural South Indian population found an association of refractive errors with age, sex, and showed significant increase of myopia with age. Robaei (2006) found 10.9 percent of myopia in Australian children. Dandona (2007) found that refractive error was the leading cause in 61 percent of eyes with vision impairment. Mundkar (2007) showed that 5-15 percent of school going children suffer from scholastic backwardness, and she found that the two major risk factors for scholastic backwardness are hearing impairment and visual impairment. Park (2007) reported that 6.7 percent of children have problems with their eyesight affecting their learning at school. Jose (2008) reported 19.7 percent of prevalence in Indian school children. Williams et al (2008) in their study found that factors associated with reading may play a part in myopia development and they suggest further comparison of different measures of reading-related or verbal activity.

Seema et al (2009) noticed 23.7 percent of refractive errors in girls and 12.2 percent in boys, and they report that refractive error can have long term impact on learning abilities and visual screening by teachers can play an important role in early detection of refractive errors and academic achievement.

**Objectives**

The study attempted to compare the academic achievements of children (i) with and without refractive errors; and (ii) before and after correction of refractive errors.

**Materials and Methods**

The study was conducted in primary schools of Thiruvananthapuram district of Kerala. The population consists of children studying in standard five of various upper primary schools in the state.

The sample consisted of 185 children with myopia and an equated group without myopia were selected as control group. The schools were selected randomly giving due representation to rural and urban locale, management of school (viz. government and Private); 25 schools were selected randomly and all children studying in standard five in selected schools were screened and 185 children with myopia were selected. The groups were equated with various variables. An intelligence test using Ravens progressive matrices sets was also administered to both groups to see whether the two groups are equated in intelligence level.

**Tools**

1. Snellens chart for vision screening
2. Ravens progressive matrices sets for intelligence score
3. Academic achievement tests for the first and second term in subjects Malayalam, Mathematics, Science and Social science.

The study attempted to find out the relationship between myopia and academic achievement and examination anxiety of primary school children. Experimental method was used in this study. The design of the experiment was equivalent groups comparison of children with refractive errors and children without refractive errors. To compare the academic achievement the investigator developed achievement tests in four school subjects based on their syllabus in first and second term. Achievement tests for the first term was given to both groups. Children with refractive errors were given corrective devices (glasses). After five months the achievement tests for the second term were given to both groups and the results were compared using t-test.

**Results and discussion**

Comparison of achievement scores of children with refractive errors before correction and children without refractive errors (Table 1) shows that there is significant difference (significant at 0.01 level) in the achievement scores of both groups in all subjects.

Comparison of achievement scores of children with refractive errors after correction and children without refractive errors shows that there is no significant difference in the achievement scores of both groups in all subjects (Table 2).
Comparison of achievement scores of children with refractive errors before and after correction (Table 3) shows that there is significant difference significant at 0.01 level in the achievement scores in all subjects.

**Discussion**

The present study reveals a high prevalence of myopia among primary school children. Results of many surveys reveal high prevalence of myopia in school children. Uncorrected refractive errors and other visually impairing conditions in school children can hinder education, personality development and career opportunities. Only few studies have been reported on academic achievement and refractive errors. In the present study children with refractive errors were found to have lower academic achievement than that of their counterparts with normal vision. There was significant difference in achievement between children with refractive errors and children without refractive errors (significant at 0.01 level). After correction of errors there was no significant difference among children of both groups. The achievement scores of children with refractive errors increased significantly after correction of errors. This indicates that the correction of errors helped the children in improving their academic achievements at school. This is supported by Saw et al (2004), Jain (2002), Saw et al (2007), Mundkar (2007) and Levecq et al (2008).

**Nursing implications**

Refractive errors are the commonest eye problems present in school children. This study indicates the need for early detection and correction of errors. The community health nurse can play an important role in early detection of errors by organising proper school health programmes and regular vision screening. Also she can train the school teachers for preliminary screening of the children and referral services. It also necessitates the need for proper health awareness programmes for the parents. Further, community health nursing students can be utilised for conducting school health programmes.

**Suggestions and Recommendations**

Further study can be conducted on various other health problems of school children and remedial measures. A school health nurse specialised in community health nursing has to be posted in every school for screening and early detection of vision problems and other health problems.

**Conclusion**

The statistical data reveals that the prevalence of myopia is quite high among school children. There is significant difference in the achievements of children with and without refractive errors and the correction of defects resulted in improvement in their academic achievement. As refractive error is found to be one of the major defects in children it demands early detection and correction of errors.

**References**


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