

Investigation of the Effect of Eye Exercises and Convergence Exercise on Visual Acuity in School-Age Children with Hypermetropia

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Abstract : Background: Hypermetropia in school-age is a pathology that responds to treatment. In the literature, there has been no study of exercise practice in hypermetropia treatment. Objective: The purpose of this study was to investigate the effects of eye exercises and convergence exercise on visual acuity in school-age children with hypermetropia. Methods: Forty volunteer school-age children with hypermetropia (30 girls, 30 boys, between 7-17 years of age) were included in the study. Sociodemographic information and clinical characteristics were evaluated. 40 participants were randomly divided into two groups: eye exercises and convergence exercises. Home exercise protocols were given to all groups for six weeks, and regular phone calls were made once a week. Individuals performed eye exercises 10 times, convergence exercises 5 min. for two sessions per day for six weeks. The right and left eyes of all the subjects participating in the study were assessed separately by the eye doctor with a Snellen chart. The participants' quality of life was assessed using Pediatric Quality of Life Inventory Version 4.0. Physical health total score (PHTS) and scale total score (STS), which were obtained by evaluating Psychosocial health total score (PSHTS) school, emotional and social functioning, were calculated separately in the scores. At the end of the exercise program, the assessment tests applied at the beginning of the study were reapplied to all individuals. Results: There was no statistically significant difference between the pre- and post-Snellen chart measurements and quality of life in the eye exercises group ($p > 0,05$). There was a statistically significant difference in visual acuity of right and left eyes ($p=0,004$, $p=0,014$) and quality of life in PHTS, PSHTS and STS in the convergence exercise group ($p=0,001$, $p=0,017$, $p=0,001$). Conclusions: In school-age children, convergence exercises were found to be effective on visual acuity and health-related quality of life. Convergence exercises are recommended for the treatment of school-aged children with hypermetropia.

Keywords : convergence exercise, eye exercises, hypermetropia, school-age children

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