Effectiveness of Vision Therapy for Children With Symptomatic Convergence Insufficiency With or Without Attention Deficit Hyperactivity Disorder

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ABSTRACT

Purpose: Attention Deficit Hyperactivity Disorder (ADHD) is a serious health concern. Not only has ADHD been implicated as factors of academic performance in school children, it has been positively correlated with delinquency and drug use. Likewise, convergence insufficiency (CI) has been correlated with ADHD. Vision Therapy (VT) has recently been shown to improve both symptoms and clinical objective measures of CI. The purpose of this study was to study the effect of VT on visual symptoms and clinical measures for children with symptomatic CI and also ADHD.

Methods: A total of 1,090 children attending grades 1 to 6 in one primary school completed a visual symptom checklist. Their parents also completed a checklist of ADHD symptoms. One hundred eighty eight children were visually symptomatic. Of these, 123 were eligible for clinical testing and agreed to participate in the study and subsequently received comprehensive eye/vision examinations. Thirty one of the children exhibited CI and some of these (N=13) also exhibited ADHD. A therapy group (N=15) underwent a 12-week therapy program and was then compared to a control group (N=16). Pearson correlations were calculated to assess if visual symptoms and/or ADHD symptoms were related to academic scores in reading or mathematics. Odds ratios were calculated to determine the prevalence of symptomatic CI subjects and children with ADHD symptoms, when compared to non-symptomatic children.

Results: Visual symptoms and ADHD symptoms were negatively correlated with academic scores for both reading and mathematics. Children with ADHD symptoms were 9-times more likely to have visual symptoms than children without ADHD symptoms. Likewise, ADHD children were 30-times more likely to have CI than children without ADHD symptoms. Visual and ADHD symptom scores, and objective visual measures were statistically improved after 12 weeks of therapy.

Conclusion: ADHD and CI are correlated. Further, VT improved visual symptoms, ADHD symptoms and clinical signs of CI in those children with CI and ADHD. Both visual symptoms and ADHD symptoms negatively affected school achievement.