

## To Estimate the Association between Visual Stress and Visual Perceptual Skills

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**Abstract :** Introduction: The two fundamental skills involved in the growth and wellbeing of any child can be categorized into visual motor and perceptual skills. Visual stress is a disorder which is characterized by visual discomfort, blurred vision, misspelling words, skipping lines, letters bunching together. There is a need to understand the deficits in perceptual skills among children with visual stress. Aim: To estimate the association between visual stress and visual perceptual skills Objective: To compare visual perceptual skills of children with and without visual stress Methodology: Children between 8 to 15 years of age participated in this cross-sectional study. All children with monocular visual acuity better than or equal to 6/6 were included. Visual perceptual skills were measured using test for visual perceptual skills (TVPS) tool. Reading speed was measured with the chosen colored overlay using Wilkins reading chart and pattern glare score was estimated using a 3cpd gratings. Visual stress was defined as change in reading speed of greater than or equal to 10% and a pattern glare score of greater than or equal to 4. Results: 252 children participated in this study and the male: female ratio of 3:2. Majority of the children preferred Magenta (28%) and Yellow (25%) colored overlay for reading. There was a significant difference between the two groups (MD=1.24±0.6) (p<0.04, 95% CI 0.01-2.43) only in the sequential memory skills. The prevalence of visual stress in this group was found to be 31% (n=78). Binary logistic regression showed that odds ratio of having poor visual perceptual skills was OR: 2.85 (95% CI 1.08-7.49) among children with visual stress. Conclusion: Children with visual stress are found to have three times poorer visual perceptual skills than children without visual stress.

**Keywords :** visual stress, visual perceptual skills, colored overlay, pattern glare

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