Response time of visual matching task and heart rate in children with Attention Deficit Hyperactivity Disorder (ADHD).

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The purpose of this study was to investigate the relation between response time of visual matching task and heart rate (HR) in children with Attention Deficit Hyperactivity Disorder (ADHD). Thirty boys who were diagnosed with ADHD and are under treatment participated in the study. The experiment consisted of three phases, a total of 5 min with rest phase, control phase, and visual matching task phase. HR was measured during each phase. The HR in visual matching task phase increased, compared to that in rest phase. There was a negative correlation between response time of visual matching task and magnitude of the HR in the visual matching task phase. In other words, as HR increased, response time of the visual matching task decreased. This means that increasing in HR increased the supply of oxygen by fast circulation of blood for cognitive processing and this induced the improvement of cognitive ability in the ADHD children. This means that increasing HR increased the supply of oxygen by fast circulation of blood for cognitive processing and this induced the improvement of cognitive ability in the ADHD children. The result of this study supports previous studies that the administration of high oxygen concentration can positively affect the cognitive performance of the ADHD children. The results of the present and previous studies also may provide scientific evidence that can be used for treating patients with cognitive problems such as ADHD.

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