



Using Cognitive Training to Enhance Attention and Working Memory for Students with ADHD: A Preliminary Study

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INTRODUCTION

Attention-deficit hyperactivity disorder (ADHD) is one of the most widespread disorders of children and adolescents in the United States (Evans et al., 2006; Lerner, 2003). Children with ADHD can exhibit difficulties with limited self-regulation skills and difficulty in developing problem solving strategies, which can make classroom tasks difficult (U.S. Office of Special Education Programs, 2006).

Numerous cognitively-based interventions have been evaluated over the years (including computerized cognitive training (CCT)) addressed ADHD symptoms (Rabiner, et al., 2010). CCT specifically addresses the cognitive deficits often found in ADHD diagnosed individuals (Dahlin, 2011).

The purpose of this study was to examine the efficacy of a CCT based intervention for adolescents with ADHD.

PARTICIPANTS

36 adolescents with attention-related concerns (13 females, 23 males) were recruited from the Prentice School in southern California. The students' ages ranged from 11-16.

PROCEDURE

All students were administered two subtests for attention as well as two subtests for working memory from the Wide Range Assessment of Memory and Learning-2 (WRAML). The subtests were combined into composite scores of attention and working memory. The students were then administered a CCT intervention know as Captain's Log ©. Four training sessions of 30 minutes were completed each week for 10 weeks. Thus, each student received 20 hours of training.

RESULTS

Figure 1 and 2 show the changes in working memory and attention respectively. Post-test results are in Table 1.

Figure 1. Attention scores before and after CCT.

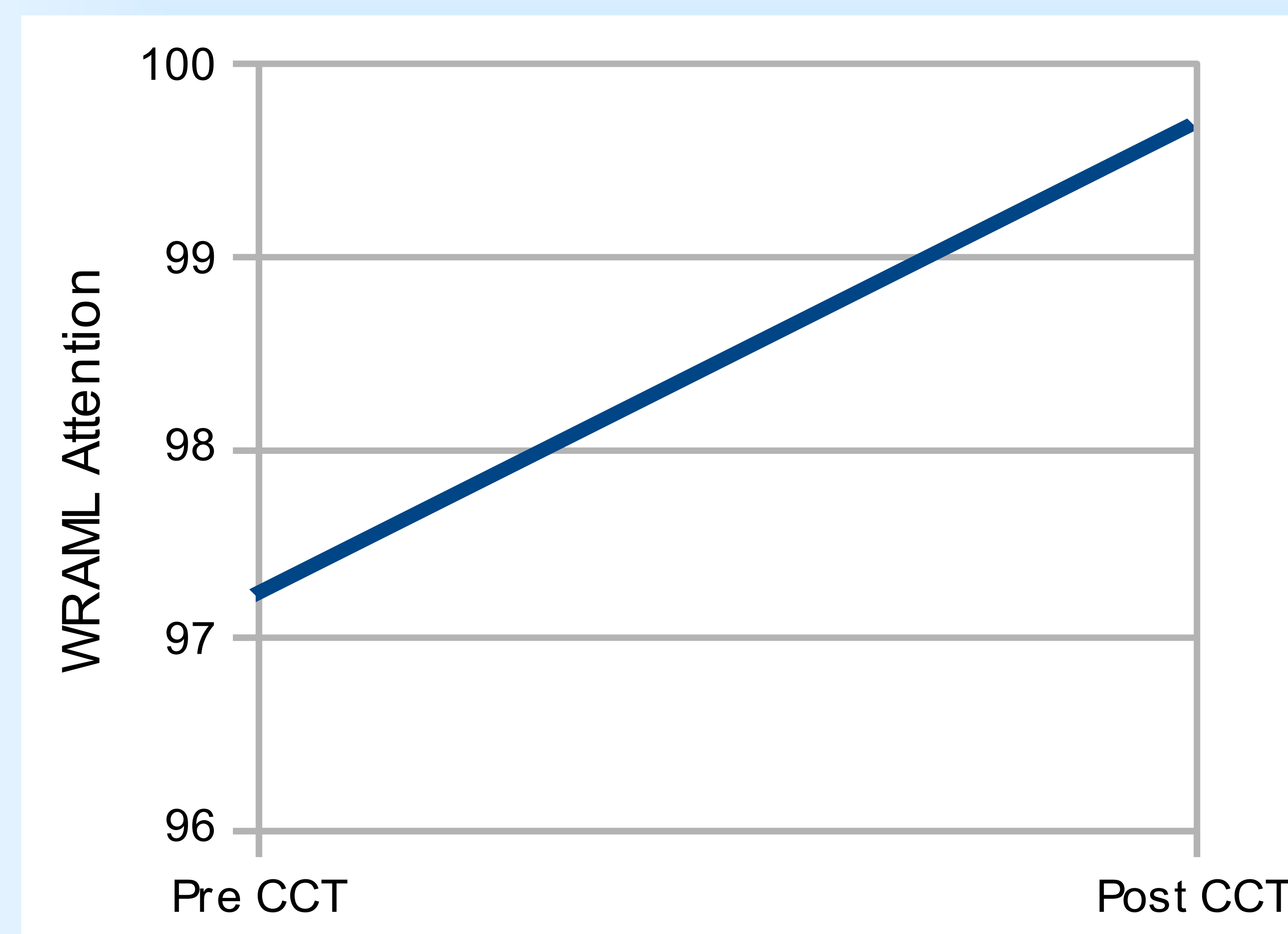


Figure 2. Working Memory scores before and after CCT.

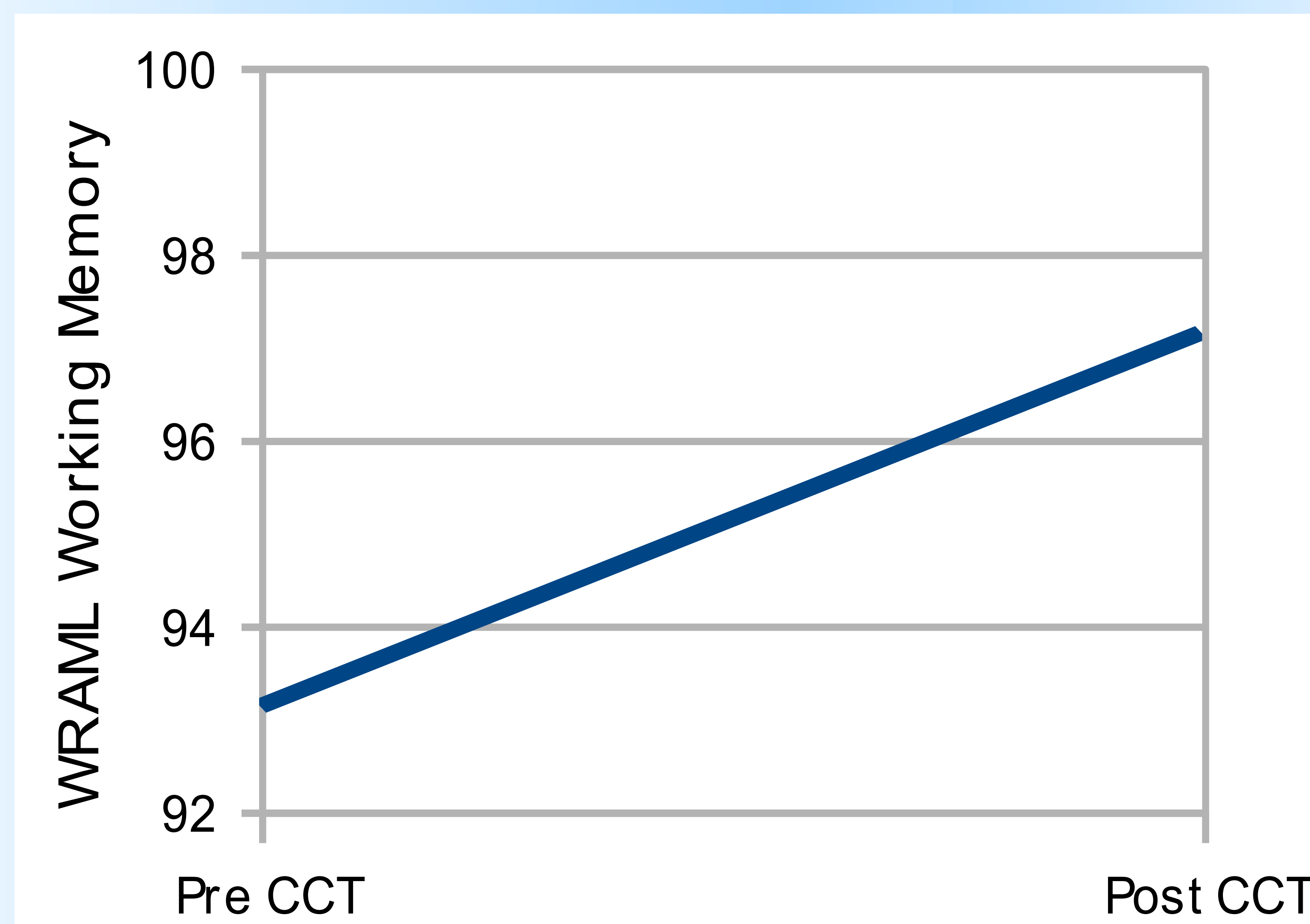


Table 1. Pre and Post Training Differences for Attention and Working Memory

	t(df)	p	Cohen's D
Attention	-1.39(35)	0.17	0.19
Working Memory	-2.93(35)	0.01*	0.34

CONCLUSIONS

Results indicated no significant difference in attention. However, a significant mean increase in working memory between the pre test ($M = 93.17$, $SD = 11.62$) and post test was observed ($M = 97.11$, $SD = 11.14$) with a small magnitude, $t(35) = -2.93$, $p < .05$, $d = .34$.

These findings support the use of CCT for adolescents with ADHD for the purposes of improving working memory. The current results offer continued evidence for the efficacy of CCT within a Response-to Intervention model. However, these results of this study should be interpreted with caution due to the small sample size.

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