

standardized beta weight and p-value for BTA were ( $\beta=.272$ ,  $p<.001$ ). When DASS variables were introduced into Block 2, the model remained significant  $F(3, 375)=4.227$ ,  $p=.006$ ,  $\Delta R^2=.030$ ). The DASS Anxiety subscale had significant beta weights in the model ( $\beta=-.210$ ,  $p=.004$ ), whereas Depression and Stress were not significant ( $\beta=.039$ ,  $p=.563$ ) and ( $\beta=.021$ ,  $p=.765$ ), respectively.

**Conclusions:** The current study examined whether mood symptoms affect the relationship between auditory attention and verbal learning. Present results confirm previous research that auditory attention has a significant impact on verbal learning (Massey, Meares, Batchelor, & Bryant, 2015; Weiser, 2004). Building upon prior research, these results indicate that when accounting for auditory attention, clinicians should be aware of possible confounds of anxiety, which may artificially suppress auditory attention. In some circumstances, a differential diagnosis may require consideration that absent anxiety auditory attention may be within normal range. Continued assessment and evaluation regarding the impact of anxiety is crucial for neuropsychologists when examining performances on verbal learning.

**Categories:** ADHD/Attentional Functions

**Keyword 1:** attention

**Keyword 2:** learning

**Keyword 3:** mood disorders

**Correspondence:** Aamir Laique, Illinois Institute of Technology, [alaique@hawk.iit.edu](mailto:alaique@hawk.iit.edu)

## 27 Differentiating Attention-deficit/Hyperactivity Disorder (ADHD) Subtype Using Continuous Performance Tests Among Children with Comorbid ADHD and Anxiety

Jennifer L. Osborne<sup>1</sup>, Allison S. Shields<sup>2</sup>, Katherine C. Paltell<sup>3</sup>, Erin T. Kaseda<sup>4</sup>, [Alexandra C. Kirsch](#)<sup>5</sup>

<sup>1</sup>Loyola University Chicago, Chicago, IL, USA.

<sup>2</sup>Northwestern University, Evanston, IL, USA.

<sup>3</sup>University of Illinois Chicago, Chicago, IL, USA.

<sup>4</sup>Rosalind Franklin University of Medicine and Science, North Chicago, IL, USA. <sup>5</sup>NorthShore University Health System, Evanston, IL, USA

**Objective:** Continuous performance tests (CPT) are often considered the gold standard for the diagnosis attention-deficit/hyperactivity disorder (ADHD), particularly when parent and teacher rating scales are inconclusive. Prior work has indicated that CPT can also help differentiate between ADHD subtypes. However, the ability of CPT to differentiate ADHD subtype has not been examined among youth with comorbid ADHD and anxiety (ADHD+A). This is particularly concerning as the extant literature suggests that anxiety symptoms may exacerbate deficits associated with ADHD (e.g., working memory, attention) and attenuate others (e.g., inhibition); thus, anxiety may influence expected patterns on the CPT. This study therefore seeks to examine the role of ADHD subtype on the relationship between ADHD+A and performance on a CPT among youth with ADHD+A.

**Participants and Methods:** Participants included 54 children ranging from 6 to 20 years old ( $M_{age}=11.83$ , 54% female) who were diagnosed with ADHD+A via neuropsychological evaluation. In terms of ADHD subtype, 51.9% ( $n=28$ ) were diagnosed with ADHD combined or ADHD primarily hyperactive and 48.1% ( $n=26$ ) were diagnosed with ADHD primarily inattentive. Approximately 46.30% ( $N=25$ ) of participants were medication naïve.

Analyses were conducted using data from the Conners Kiddie Continuous Performance Test – Second Edition (KCPT-2), Conners Continuous Performance – Second Edition (CPT-2) and the Conners Continuous Performance - Third Edition (CPT-3), which are part of the same family of performance-based attention measures. Independent samples t-tests were conducted to examine performance differences in aspects of attention (e.g., inattentiveness, sustained attention) and hyperactivity (e.g., impulsivity, inhibition).

**Results:** ADHD subtype was not significantly related to measures of inattentiveness. This includes the number of targets missed (omissions; ( $t(39)=-.532$ ,  $p=.59$ )) and variability in response time (variability; ( $t(39)=-0.30$ ,  $p=.77$ )). In terms of sustained attention, ADHD subtype was not related to variability in response speed across blocks (Hit SEBC/HRT Block Change; ( $t(39)=-0.26$ ,  $p=.79$ )). Importantly, these results were consistent regardless of ADHD medication status.

ADHD subtype was also not significantly related to impulsivity. This includes responses to non-targets (commissions; ( $t(39)=-1.05$ ,  $p=.30$ )), random or anticipatory responding

(perseverations; ( $t(39)=-0.19, p=.85$ )), and mean response speed of correct responses (HR; ( $t(39)=-0.72, p=.48$ )).

**Conclusions:** The extant literature suggests that CPT can help clinicians differentiate between ADHD subtypes. However, the results of this study indicate that there are no performance differences on the CPT among youth with comorbid ADHD and anxiety. There are several limitations to consider. First, this study had a relatively small sample size, which also limited the ability to examine ADHD primarily hyperactive/impulsive as a distinct subtype. Additionally, this study did not examine the effect of individual anxiety disorders (i.e., generalized anxiety disorder, specific phobias). Finally, these findings may not generalize to other standardized measures of attention or more ecologically valid measures. Despite these limitations, this study is an important step in understanding the relationship between ADHD+A and performance on attention measures. Clinicians should be cautious in using results from CPT to distinguish between ADHD subtype among children with comorbid anxiety.

**Categories:** ADHD/Attentional Functions

**Keyword 1:** anxiety

**Keyword 2:** attention deficit hyperactivity disorder

**Correspondence:** Jennifer Osborne, Loyola University Chicago, josborne2@luc.edu

## 28 Executive Functioning in Children with Sluggish Cognitive Tempo

Ashni S Persad, Oladipo Adedeji, Jasmine Robles, Anne A. Noltz  
Fuller Graduate School of Psychology and Marriage and Family Therapy, Pasadena, CA, USA

**Objective:** Sluggish cognitive tempo (SCT) is an attentional disorder characterized by excessive daydreaming, reduced alertness, slowed motor behavior, and mental foggy. The purpose of the present study was to examine potential executive functioning group differences between children with high SCT symptoms versus those with low SCT symptoms. It was hypothesized that children with high SCT symptoms would have greater executive functioning deficits than

children with low SCT symptoms, as reported by their teachers.

**Participants and Methods:** There were 32 children in this study, between the ages of 6 to 13 ( $M = 8.94$ ;  $SD = 1.97$ ). To measure the level of SCT symptomology, an average rating on four items from the Child Behavior Checklist (CBCL; Items 13, 17, 80, 102) and an average rating from five items from the Teacher's Report Form (TRF; Items 13, 17, 60, 80, 102) were acquired and averaged to produce a combined measure of SCT. The present study had fair to good reliability for CBCL and TRF with Cronbach alpha values of .71 and .82 respectively. Eighteen participants had SCT scores above the Garner et al. (2010) cutoff criteria for the CBCL (SCT over 0.67) or the TRF (SCT over 0.75) which placed them in the high SCT group. The 13 participants who did not meet criteria for high SCT were considered the low SCT group. To measure executive function, Behavior Rating Inventory of Executive Function (BRIEF) teacher ratings were used. A general linear model multivariate analysis was conducted on each measure of the BRIEF teacher reports with ADHD-Inattentive (ADHD-IN) and Verbal Comprehension Index (VCI) scores as covariates.

**Results:** There were significant group differences between the BRIEF Teacher Global Executive Composite scores of the high SCT group ( $M = 60.81, SD = 7.78$ ) versus the low SCT group ( $M = 50.31, SD = 6.87$ ),  $F(1, 30) = 11.73, p < .001, \eta^2 = .59$ . The high SCT group scored significantly higher than the low SCT group on the Initiate ( $p < .001$ ), Working Memory ( $p < .001$ ), Plan/Organize ( $p < .001$ ), Monitor ( $p < .01$ ), and Organization of Materials ( $p < .05$ ) subscales. These findings indicate that the children in the high SCT group had greater executive functioning difficulties overall than the low SCT group.

**Conclusions:** Children with high SCT symptoms demonstrated greater executive functioning deficits than children with low SCT symptoms regarding metacognition but not behavioral regulation. This means that children with SCT likely struggle more with initiating tasks, planning, organization, memory, and monitoring their thinking and behaviors than children without SCT. These skills are important for learning, which may at least partially help explain why children with SCT experience problems in school.

**Categories:** ADHD/Attentional Functions