(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
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28 Executive Functioning in Children with Sluggish Cognitive Tempo

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Objective: Sluggish cognitive tempo (SCT) is an attentional disorder characterized by excessive daydreaming, reduced alertness, slowed motor behavior, and mental fogginess. 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 ($M = 50.31$, $SD = 6.87$), $F(1, 30) = 11.73$, $p < .001$, $\eta p2 = .59$. 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

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Keyword 1: executive functions
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29 Vascular Burden Mediates the Relationship Between ADHD and Cognition in Older Adults

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Objective: Accumulating evidence from case-control and population studies suggests attention-deficit/hyperactivity disorder (ADHD) confers a 2- to 5-fold risk of all-cause dementia later in life. Here, we investigate vascular burden as a potential mediator of this relationship, because vascular integrity is well known to be compromised in ADHD (due to chronic obesity, diabetes, and hypertension) and is also a robust risk factor for neurodegeneration (due to reduced cerebral blood flow). We use brain white matter hyperintensities (WMH) as a measure of vascular burden.
Participants and Methods: Thirty-nine adults aged 48-81 years with clinical ADHD, and 37 matched controls, completed neuropsychological testing and 1.5 T structural neuroimaging. None had stroke. Cognitive tests were demographically-adjusted to *Z* scores using regression-based norms generated from the control group, and averaged across tests within domains of short- and long-term verbal memory (forward digit span, California Verbal Learning Test, Logical Memory), visual memory (Visual Recognition, Rey Complex Figure), processing speed (coding, trails A, Stroop word-reading and color-naming), language (Boston Naming Test, semantic fluency), visuoconstruction (clock drawing, Rey Complex Figure copy), and executive function (backward digit span, trails B, phonemic fluency, Stroop inhibition, Wisconsin Card Sorting Test). Total WMH volumes (i.e., combined periventricular and deep) within subcortical, temporal, frontal, parietal, and occipital regions were individually divided by regional volumes to produce a proportion of each region representing WMH, then log-transformed to correct for skew. Age-corrected linear regression quantified total effects of ADHD on cognition; when these were significant, mediation models quantified the direct effects of ADHD on WMH volumes and the direct effect of WMH volumes on cognition. Sobel's test estimated indirect effects of ADHD on cognition via WMH.
Results: Group had a significant total effect on Processing Speed (β=-1.154, p<.001) and on Executive Functioning (β=-0.587, p=.004), where ADHD participants had lower composite scores (M=-1.10, SD=1.76 and M=-0.54, SD=1.14 respectively) than controls (M=0.02, SD=0.74; M=0.00, SD=0.49). Only frontal-lobe WMH had direct effects on Processing Speed (β=-0.315, p=.012) and Executive Functioning (β=-0.273, p<.001). The direct effect of ADHD on frontal WMH was significant (β=-0.734, p=.016), and Sobel's tests supported an indirect effect of ADHD on Executive Functioning

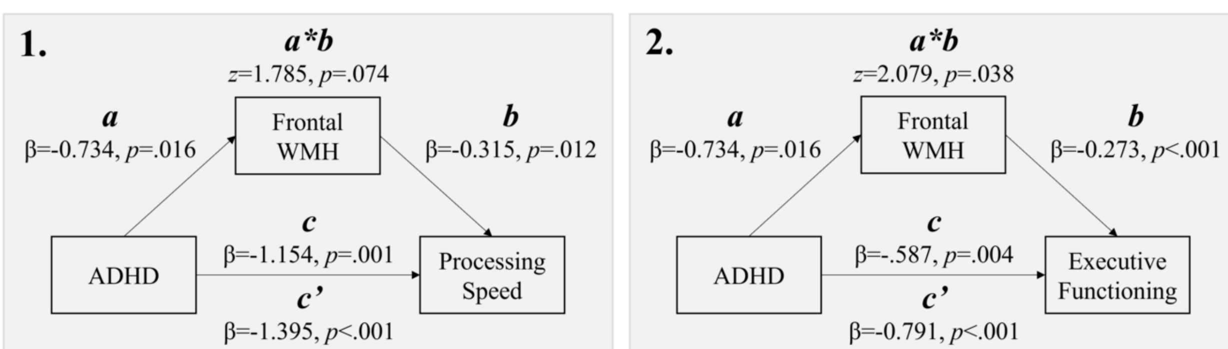

Figure 1. Mediation model depicting the role of frontal WMH volumes in the association between ADHD and processing speed (1) and executive functioning (2). The indirect effect of ADHD on cognition via WMH refers to path (a*b), and the direct effect (c') represents the effect of ADHD on cognition after controlling for WMH. The total effect (c) is the sum of the indirect (a*b) and direct (c') effects.

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