Objective: Children with post-acute sequelae of COVID-19 (PASC) often report fatigue, attention problems, anxiety, and low mood. Sluggish cognitive tempo (SCT) is a constellation of behavioral symptoms (e.g., drowsiness, moving slowly, mental fogginess, daydreaming, confusion, or inattention) often associated with but distinct from attention-deficit/hyperactivity disorder (ADHD), executive function deficits and depressive symptoms. Given the apparent overlapping symptoms of PASC and SCT, this retrospective chart review aimed to 1) characterize SCT symptoms among pediatric patients with PASC relative to published normative and clinically referred samples, and 2) examine associations between subscales of SCT with ADHD symptoms, depression, anxiety, and functional impairment in this clinical sample.
Participants and Methods: This study included retrospective data from 25 patients with PASC (17 females; Mean age=13.73 years, SD=2.07, range=8-19) who were referred for a neuropsychological evaluation following a multidisciplinary visit at a post-COVID-19 rehabilitation clinic within an academic medical center. Patients' caregivers completed the SCT Scale, ADHD Rating Scale 5 (ADHD-RS-V), Conners Comprehensive Behavior Rating Scale (CBRS), and Impairment Rating Scale (IRS). Higher scores on the SCT, CBRS, and IRS total reflect more problems in the specified area. Welch's t-tests were utilized to compare SCT scores from our cohort of pediatric patients with PASC relative to a normative community sample (Penny et al., 2009) and a heterogeneous clinically-referred sample (Koriakin et al., 2015). Bivariate correlations were computed to examine associations between SCT (Daydreamy, Low Initiation, Sluggish/Sleepy), ADHD (Inattention and Hyperactivity subscales from the ADHD-RS-V), affective symptoms (Major Depressive Episode (MDE) and Generalized Anxiety Disorder (GAD) scales from the CBRS), and functional impairment (average score from IRS). Multiple linear regressions were used to determine whether SCT factors independently contribute to variance in functional deficits after accounting for age of evaluation, low mood, and anxiety.
Results: Sluggish/Sleepy and Low Initiation were elevated in our cohort with PASC as compared to normative and mixed clinical samples from Penny et al. and Koriakin et al. ($t>4.36$, $p<0.001$). Patients with PASC had lower scores on the Daydreamy SCT scale than the clinically referred cohort ($t=2.06$, $p=0.049$), but similar to the normative sample ($t=1.48$, $p=0.15$). After controlling for age of testing, of the SCT subscales, only Low Initiation was associated with MDE ($r=0.62$, $p=0.005$), GAD ($r=0.56$, $p=0.01$) and overall Functional Impairment ($r=0.48$, $p=0.04$). Low Initiation was not correlated with Inattention or Hyperactivity. Notably, multiple regressions revealed Low Initiation scores were not associated with functional impairment when accounting for depression and anxiety symptoms(Low Initiation: $\beta=0.48$, $p=0.04$; Low Initiation when depression and anxiety are included in independent regression models: $\beta s=0.13$ and 0.29, $ps=0.58$ and 0.27 respectively).
Conclusions: Children and adolescents with PASC demonstrate more sluggish/sleepy presentation and difficulties with initiating activities or directing effort, as compared to normative and mixed clinically referred samples. Low initiation was associated with symptoms of MDE and GAD and functional impairment, but not with symptoms of ADHD. Depression and anxiety may moderate the association between poor initiation with functional impairment, highlighting the importance of psychological interventions to address mental health among youth with PASC and behavioral/cognitive concerns.

Categories: Infectious Disease (HIV/COVID/Hepatitis/Viruses)
Keyword 1: infectious disease
Keyword 2: depression
Keyword 3: everyday functioning
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65 The Best Tests: Optimizing Detection of Cognitive Decline in People Living with HIV

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Objective: Approximately half of people living with HIV (PWH) experience HIV-associated neurocognitive disorders (HAND), yet HAND often goes undiagnosed. There is an ongoing need to find efficient, cost-effective ways to screen for HAND and monitor its progression in order to intervene earlier in its course and more effectively treat it. Prior studies that analyzed brief HAND screening tools have demonstrated that certain cognitive test pairs are sensitive to HAND cross-sectionally and outperform other screening tools such as the HIV Dementia Scale (HDS). However, few studies have examined optimal tests for longitudinal screening. This study aims to identify the best cognitive test pairs for detecting cognitive decline longitudinally.
Participants and Methods: Participants were HIV+ adults (N=132; ages 25-68; 59% men; 92% Black) from the Temple/Drexel Comprehensive NeuroHIV Center cohort. Participants were currently well treated (98% on cART, 92% with undetectable viral load, and mean current CD4 count=686). They completed comprehensive neurocognitive assessments longitudinally (328 total visits, average follow-up time=4.9 years). Eighteen participants (14% of the cohort) demonstrated significant cognitive decline, defined as a decline in global cognitive z-score of 0.5 (SD) or more. In receiver operating characteristic (ROC) analyses, tests with an area under the curve (AUC) of greater than .7 were included in subsequent test pair analyses. Further ROC analyses examined the sensitivity and specificity of each test pair in detecting significant cognitive decline. Results were compared with the predictive ability of the Modified HIV Dementia Scale (MHDS).
Results: The following test pairs demonstrated the best balance between sensitivity and specificity in detecting global cognitive decline: Grooved Pegboard dominant hand (GPD) and category fluency (sensitivity=.89, specificity=.60, AUC=.75, p<.001), GPD and Coding (sensitivity=.76, specificity=.70, AUC=.73, p<.001), letter fluency and Trail Making Test (TMT) B (sensitivity=.82, specificity=.63, AUC=.73, p<.001), and GPD and TMT B (sensitivity=.81, specificity=.64, AUC=.73, p<.001). Change in MHDS predicted significant decline no better than chance (sensitivity=.61, specificity=.47, AUC=.53, p=.65).
Conclusions: Several cognitive test pairs, particularly those that include GPD, are sensitive to HIV-associated cognitive change, and far more sensitive and specific than the MHDS. Cognitive test pairs can serve as valid, rapid, cost-effective screening tools for detecting cognitive change in PWH, thereby better enabling early detection and intervention. Future research should validate the present findings in other cohorts and examine the implementation of test pair screenings in HIV care settings. Most of the optimal tests identified are consistent with the well-established impact of HAND on frontal-subcortical motor and executive networks. The utility of category fluency is somewhat unexpected as it places more demands on temporal semantic networks; future research should explore the factors driving this finding, such as the potential interaction of HIV with aging and neurodegenerative disease.

Categories: Infectious Disease (HIV/COVID/Hepatitis/Viruses)
Keyword 1: cognitive screening
Keyword 2: HIV/AIDS
Keyword 3: neuropsychological assessment
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66 An Exploratory Analysis of the Moderating Effect of Internalizing Symptoms on Memory Performance Following COVID-19 Infection.

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Objective: Cognitive difficulties are amongst the most frequently reported sequelae following COVID-19 infection, even in those experiencing mild to moderate illness (Matos et al., 2021). Recent research has identified patterns of diminished cognitive performance on tests of memory and executive functioning in COVID-19 cases; however, the etiology of neurocognitive difficulties remains unclear (Delgado-Alonso et al., 2022). Emerging evidence has identified moderate associations between decreased performance on neuropsychological tests of memory and elevated anxiety and depression symptom reporting in COVID-19 patients. Similar associations are well-established in the literature in persons with anxiety and depression disorders, warranting further investigation as to

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