Correspondence: Marla J. Hamberger
Columbia University mh61@columbia.edu

---

73 Do depression, anxiety, or stress moderate the relationship between simple attention, working memory and verbal learning?

Aamir Laique[1], Jessica Springer[1], Jenna Axelrod[2], Leslie Guidotti Breting[2], Elizabeth Geary[2], Jerry J Sweet[2]
[1]Illinois Institute, Chicago, IL, USA. [2]NorthShore University HealthSystem, Evanston, IL, USA

Objective: Working memory is a vital construct in efficient verbal memory encoding (Cotton & Ricker, 2021). Working memory is impacted by attentional capacities (Riccio, Cohen, Garrison, & Smith, 2005). Mood symptoms impact efficient information processing and consolidation of memory (Hubbard, 2016; Lukasik, 2019). This study examines self-reported symptoms of depression, anxiety, and stress as possible moderators of the relationship between working memory and a verbal list-learning task.
Participants and Methods: Archival data from 415 adults (Mage= 56.10, SD=18.05; Medu= 15.5 SD=2.2; 53% female; 73% white) were collected at an outpatient clinic. Sex and race were not available in a small percentage of cases included in analyses. The Wechsler Adult Intelligence Scale 4th Edition Digit Span subtest was given to assess attention and working memory. Although Digit Span Forward is a measure of simple attention, not working memory, it was included in initial analyses because the subtest was given as a whole. The three components of Digit Span total, Forward, Backward, and Sequencing were also investigated separately, with the two latter scores being better representations of working memory. Learning was assessed via the California Verbal Learning Test (CVLT-II) total T-Score (Trials 1-5). Mood was assessed via the Depression Anxiety and Stress Scales (DASS-42).
Results: Results of a hierarchical linear regression showed a significant effect between total Digit Span performance and total learning on the CVLT-II in the Block 1 ($F(3, 411)=14.383$, $p =<.001$, $\Delta R2=.095$). Standardized beta weights and p-values for Digit Span Forward, Backward, and Sequencing were ($\beta=-.50$,

$p=.374$), ($\beta= .159$, $p=.009$), and ($\beta=.210$, $p<.001$) respectively. In Block 2, when the DASS variables were introduced, the model remained significant $F(3,408)=2.602$, $p=.05$, $\Delta R2=.017$). The DASS anxiety and stress subscales had significant beta weights in the model ($\beta=-.172$, $p=.015$) and ($\beta=.144$, $p=.039$) respectively, with depression being insignificant ($\beta=-.023$, $p=.724$).
Conclusions: Mood symptoms have been shown to be an important consideration when assessing working memory and verbal learning performance (Massey, Meares, Batchelor, & Bryant, 2015). Present results demonstrate that when accounting for working memory, anxiety and stress were significant predictors of performance on a measure of verbal learning. Additionally, as the components best representing working memory, Digit Span Sequencing and Backward were significantly correlated with verbal learning, whereas a measure best representing simple attention, Digit Span Forward, was not significantly correlated with verbal learning.

Categories: Executive Functions/Frontal Lobes
Keyword 1: working memory
Keyword 2: learning
Keyword 3: mood disorders
Correspondence: Aamir Laique, Illinois Institute of Technology, alaique@hawk.iit.edu

---

74 The Role of Executive Functioning in Predicting Health Numeracy in a Memory Disorders Clinic.

Ayesha Arora, Matthew S Phillips, Veronica Koralewski, Neil H Pliskin, Jason R Soble, Zachary J Resch, Kyle J Jennette
University of Illinois at Chicago, Chicago, Illinois, USA

Objective: Health numeracy is the understanding and application of information conveyed with numbers, tables and graphs, and probabilities in order to effectively manage one's own healthcare. Health numeracy is a vital aspect of communicating with healthcare providers and participating in one's own medical decision making, which is especially important in aging populations. Current literature indicates that assessing and establishing one's health numeracy abilities is among the first steps in

providing necessary resources and accommodating patients' individual needs. Additionally, older adults with diffuse cognitive impairment often have issues with facets of executive functioning; however, the extant literature does not discuss the role of executive functioning in relation to health numeracy in this population. The purpose of this study was to explore the relationship between performance on tasks of executive functioning and objectively-measured health numeracy abilities in older adult patients.

Participants and Methods: This study included a sample of 42 older adult patients referred for neuropsychological evaluation for memory complaints who were administered the Test of Premorbid Functioning (TOPF), Trail Making Test – Part B (TMT-B), and Stroop Color and Word Test (SCWT Color Word Interference [CWI]) as part of a larger standardized battery. Patients were also administered the Numerical Understand in Medicine Instrument – Short Form (NUMI-SF). All included patients had <2 performance validity test failures. The sample was racially diverse (47.6% Black, 35.7% White, 14.3% Hispanic, 2.4% Asian) and 54.8% female. Average age was 62.95 (SD= 8.6) and average education was 14.1 (SD=2.7). Diagnostically, 47.6% of the sample were cognitively normal, 33.3% had mild cognitive impairment, and 19.0% had dementia. Average NUMI-SF score was 4.79 (SD= 1.7). Two multiple regressions were conducted to evaluate the extent to which executive functioning, as measured by the TMT-B and SCWT CWI predicted NUMI-SF, and the additive predictive power of premorbid IQ and demographics via the TOPF on the relationship between executive functioning and NUMI-SF.

Results: The first regression, which measured the relationship between the TMT-B and SCWT CWI upon NUMI-SF scores, was not significant (p=.616). The model was significant with the addition of the TOPF (β=.595, p<.001) and TOPF alone predicted ~60% of the variance in NUMI-SF score, while TMT-B and SCWT CWI remained non-significant.

Conclusions: These results indicate that common measures of executive functioning are not reliable predictors of health literacy with or without the moderating of premorbid intellectual functioning taken into consideration. This suggests that health numeracy is likely to be minimally affected by deficits in executive functioning and rather may be better accounted for by premorbid intellectual functioning and/or other sociodemographic factors (e.g.

socioeconomic status, education quality, occupation). Future studies will benefit from elucidating the contributions of other social determinant factors on predicting health numeracy.

---

75 Examining the Role of Executive Functions on the Intention-Behavior Gap of Alcohol Harm Reduction Strategy Use

Becky K Gius[1,2], Robert Schlauch[1]
[1]University of South Florida, Tampa, FL, USA.
[2]South Texas Veterans Health Care System, San Antonio, TX, USA

Objective: The Temporal Self-Regulation Theory (Hall and Fong, 2007) proposes that initiation and maintenance of effortful health behaviors relies on executive functions (EF: cognitive abilities associated with goal-directed behavior). Alcohol harm reduction strategies are health behaviors that aim to minimize the likelihood or severity of consequences associated with alcohol use. Some drinkers have the intention to drink safely but lack the ability to effectively initiate and execute the harm reduction behaviors. Executive functions may be one mechanism that helps explain the gap between safe drinking intentions and behavior. Specific components of EF may be differentially associated with alcohol harm reduction strategy use; working memory and set-shifting may be especially important in planning and following through with alcohol harm reduction strategies, and individuals with greater working memory capacity and set-shifting abilities may be more successful in implementing strategies that require preplanning and have a focus on altering typical the manner of drinking (e.g., not mixing types of alcohol). Inhibition may be important for resisting temptations that are inconsistent with safe drinking goals, and those with stronger inhibitory control may be more likely to follow through with strategies that require withholding responses despite desire to engage in the