---

10 Semantic Memory as a Predictor of Future Memory Decline

Blair Honsey, Carlos Rodriguez, Maegan Hatfield-Eldred, Heshan Fernando
Spectrum Health Medical Group, Grand Rapids, Michigan, USA

Objective: To determine if the degree of split between phonemic verbal fluency and semantic verbal fluency at initial visit is predictive of decline in memory performance between initial evaluation and follow-up.
Participants and Methods: Data from a retrospective multidisciplinary memory clinic database at Spectrum Health was utilized. We examined data from 90 participants who had both an initial and follow-up evaluation completed (initial age = 77.1±4.7 years, follow-up age = 78.4±4.7 years, education = 13.9±3.1 years, race = 91% White, 7% Black, & 2% Hispanic, sex = 61% female, time between evaluations = 15.2±9.9 months). Patients who returned for follow-up did not meet criteria for dementia at time one. Split between phonemic and semantic fluency, termed the semantic-phonological delta (SPD) was measured at the initial evaluation by subtracting the Controlled Oral Word Association Test (COWAT; FAS) T-score from the Animal Naming Test (ANT) T-score. Change in memory score was defined in two ways: 1) subtracting the follow-up evaluation Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) List Recognition Score (RBANS percentiles were converted to a scaled score) from the initial evaluation List Recognition Score (List Recognition Delta), and 2) computing the difference in the RBANS Delayed Memory Index Standard Score between the initial evaluation and the follow-up evaluation (RBANS Memory Delta).
Results: Average semantic fluency T scores were (M = 40.3, SD = 12.3) and phonemic fluency T scores were (M = 42.7, SD = 10.3) at initial evaluation. Bivariate correlations were used to determine the relationship between the clinical variables. SPD was significantly correlated with List Recognition Delta, r(88) = .23, p = .026, with greater discrepancies in verbal fluency scores associated with higher level of decline in List Recognition at follow-up. By comparison, Semantic Fluency performance itself at initial evaluation was not significantly correlated with List Recognition Delta, r(88) = .17, p = .097. The correlation between SPD and the RBANS Memory Delta was also not significant, r(88) = .14, p = .166. At follow-up evaluation, 39% of the sample received a diagnosis of Alzheimer's disease. Of those diagnosed with Alzheimer's disease, 66% had a negative SPD split at time one, performing worse on semantic fluency compared to phonemic fluency.
Conclusions: SPD is a better predictor of decline in RBANS List Recognition performance between evaluations than semantic fluency alone, with a larger negative SPD score (worse semantic fluency performance compared to phonemic fluency) at initial evaluation predicting decline in List Recognition performance at follow-up evaluation. SPD at initial evaluation was not significantly correlated with change in RBANS Delayed Memory Index score between evaluations. This may be because there are some patients who are similarly impaired in both semantic and phonemic verbal fluency at initial evaluation who later demonstrate progressive decline in memory retrieval due to hippocampal-sparing etiologies (e.g., vascular dementia). Overall, these findings are consistent with previous work suggesting that declines in the semantic memory system precede declines in episodic memory retention in conditions such as Alzheimer's disease.

---

11 Evaluating a Comprehensive Care Management Program for Dementia: Three Years into the Care Ecosystem Program.

Carolina Pereira, Beth Arredondo, Robert J. Sawyer