

**RESULTS**

- **Statistical Analyses**
  - Between group (PD vs. Control) and rater (self vs. informant) differences were evaluated using ANOVA with an alpha threshold of \( p = 0.05 \).
  - Stepwise linear regression was used for each group to examine the relationship between the BRIEF-A (BRI and MI composite indices) and neuropsychological measures with the following independent variables: VF Category Fluency, VF Category Switching Accuracy, CWI Inhibition/ Switching, GDS, SDMT, Digit Span, and UPDRS Part III (PD group only).

- **Self and informant report measures of executive functions**
  - No group differences were found on neuropsychological tests of executive functions (Table 3).

- **Further analyses of the Metacognition Index (MI)** revealed that the PD group self-reported significantly increased difficulties on the Initiate scale (i.e., problems generating ideas or starting tasks) than controls (Table 5).

- The BRIEF-A, individual's with PD endorsed more severe executive dysfunction on the Metacognitive Index than controls. PD participants also endorsed more severe impairment on this index than was reported by their informants. No additional group or rater differences were found for this measure (Table 5).

**RESULTS (continued)**

- For self-report MI T score in the PD group, the SDMT, \( 8\text{–}31 \), \( t(10) = 2.28 \), \( p = 0.07 \), and the GDS were significant regressors, \( B = 0.29 \), \( R^2 = 0.21 \), \( p = 0.042 \); the model explained a significant proportion of the variance, \( R^2 = 0.075 \), \( F(1,45) = 4.40 \), \( p = 0.042 \) (Figure 1).

**Figure 1.** Significant Regressors for Self-Reported MI

- For other-report MI T score, decreased processing speed was associated with increased informant-reported executive dysfunction for the PD group: SDMT: \( 8\text{–}75 \), \( t(6) = 4.6 \), \( p = 0.001 \). VF Category Fluency was also a significant regressor, \( B = 4.5 \), \( t(7) = 2.77 \), \( p = 0.009 \) which explained a significant proportion of variance, \( R^2 = 0.13 \), \( F(1,37) = 7.64 \), \( p = 0.009 \) (Figure 2).

**Figure 2.** Significant Regressors for Other-Reported MI

**CONCLUSIONS**

- Individuals with PD perceive executive dysfunction during completion of daily tasks that is not captured by performance-based neuropsychological tests of executive function.
- Problems initiating, coordinating, and sustaining daily problem solving as reported by individuals with PD appear to be related to slowed processing speed, and to a lesser extent, depression.
- Informants’ perception of executive dysfunction is related to slowed processing speed as well as difficulties with fluid generation of semantic information (Category Fluency).
- Findings highlight the contribution of speeded processing for performance of everyday executive tasks in PD.

- The discrepancy between performance-based and reported executive dysfunction may reflect subtle, internal changes in cognition that are not yet observed by loved ones or captured by neuropsychological testing.

**ACKNOWLEDGMENTS**

This work was supported by grants from the Department of Veterans Affairs Office of Research and Development, Rehabilitation R&D Service (I01RX001018) and from the National Institute of Neurological Disorders and Stroke (R01NS064040) to ED.

---

**METHODS**

- **PD Demographics**
  - S1 individuals with Parkinson’s disease (Table 1) were compared to 38 healthy controls of similar age, sex, years of education, IQ (NAART-R), and global cognitive status (MMSE; Table 2).

<table>
<thead>
<tr>
<th>Table 1. PD Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA (mg)</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>51</td>
</tr>
</tbody>
</table>

- Each participant completed the following:
  - D-KEFS Verbal Fluency Test
  - D-KEFS Color-Word Interference Test

- **Self and informant report measures of executive functions**
  - BRIEF-A (Self-Report & Informant Report Forms)
    - BRIEF-A, Metacognition Index: an index capturing the ability to coordinate and sustain fluid problem solving for effective task completion
    - BRIEF-A, Behavioral Regulation Index: an index reflecting the ability to manage one’s emotional and behavioral responses during daily life

**Geriatric Depression Scale (depression)**
- Symbol Digit Modalities Test (processing speed)
- WAIS-III Digit Span (attention and working memory)

---

**REFERENCES**

K.E. Lanni¹, J. Ross²,³, C.I. Higginson⁴, E.M. Dressler²,³, K.A. Sigvardt⁵, L. Zhang⁵, N. Malhado-Chang⁵, E.A. Disbrow²,⁶

¹. VA Northern California Health Care System, Mather CA; 2. VA Northern California Health Care System, Martinez CA; 3. Center for Neuroscience, UC Davis, Davis CA; 4. Department of Psychology, Loyola University Maryland, Baltimore MD; 5. Department of Neurology, UC Davis, Sacramento CA; 6. Department of Neurology, LSU Shreveport Health Sciences Center