To test the hypothesis that normative sample

HVLT = WMS-III

To test the observation that patients perform

WMS-III = HVLT WMS-III T Scores

Comparing Memory for Word Lists and Stories in Parkinson Disease: Disease Effect or Psychometric Artifact?

L.B. Zahodne¹, A. Nisenzon¹, C.E. Price¹, R.M. Bauer¹, H.H. Fernandez², M.S. Okun², & D. Bowers¹

Clinical & Health Psychology¹ and Neurology², University of Florida

BACKGROUND

• Clinically, patients with Parkinson disease (PD) often perform more poorly on episodic memory tasks involving word list learning than on those involving stories (i.e., HVLT vs. WMS-III LM Stories)

• Fronto-striatal hypothesis: List learning involves more effortful encoding/retention due to absence of inherent organization, meaningfulness
  - More impaired in free recall than cued recall or recognition (Benedict & Schretlen 1998)
  - More impaired on tasks of incidental than intentional learning

• Normative sample hypothesis: The HVLT and WMS-III were normed using independent samples -WMS-III normative sample reported relatively lower education (Lezak, Howieson, & Loring 2004)

AIMS of Study

AIM 1: To test the hypothesis that normative sample differences contribute to poorer performance on HVLT as compared to WMS-III Logical Memory
  - Prediction: Better performance on WMS-III Word Lists (co-normed with WMS-III LM) than on HVLT

AIM 2: To test the observation that patients perform worse on more effortful list learning tasks than on tests of story memory
  - Prediction: Better performance on WMS-III LM than on both HVLT & WMS-III Word Lists

METHODS

Participants: N = 37 idiopathic PD pts

Mean T Scores

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Trial 1</th>
<th>Immediate Recall</th>
<th>Delayed Recall</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMS-III Word List</td>
<td>45.6 (12.7)</td>
<td>42.6 (12.6)</td>
<td>51.5 (8.5)</td>
</tr>
<tr>
<td>HVLT Word List -1</td>
<td>41.0 (9.0)</td>
<td>41.4 (12.4)</td>
<td>40.9 (11.5)</td>
</tr>
<tr>
<td>WMS-III LM Stories</td>
<td>50.1 (12.5)</td>
<td>50.2 (13.3)</td>
<td>53.5 (11.4)</td>
</tr>
</tbody>
</table>

RESULTS

Immediate Recall:

• Logical Memory Story scores higher than both word list tasks
• HVLT and WMS-III Word List tasks not significantly different

Delayed Recall:

• Logical Memory Story scores higher than both word list tasks
• HVLT word list scores higher than WMS-III Word List scores

CONCLUSIONS

• Both hypotheses were partially supported:
  - Patients exhibited immediate memory impairments for word lists compared to stories (fronto-striatal hypothesis)
  - Patients performed better on WMS-III Word List than HVLT after Trial 1 and a delay (normative sample hypothesis)
• Further research is needed to examine the relative contributions of procedural differences between the word list tasks to observed differences
• Clinical decision-making for DBS candidacy should not rely solely on word list memory measures, as impairments may reflect PD-related frontal dysfunction rather than hippocampal impairment

Acknowledgements: Supported by NIH/NINDS (NS50683, NS044997), the National Parkinson Center of Excellence, and the Michael J. Fox Foundation (DOPA non-responsive program)