Evaluation of WMS-IV Logical Memory Performance (Storage vs. Retrieval) in a Memory Disorders Clinic

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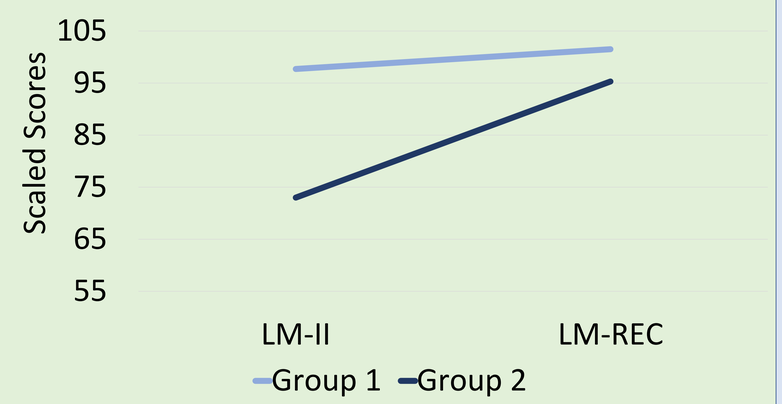
Objectives

- This study examined the recently published 20-item 5-option multiple choice recognition measure (LM-REC) for the Logical Memory subtest of the Wechsler Memory Scale-IV (WMS-IV) in a Memory Disorders Clinic .
- This more accurately measures retrieval difficulties that are not fully accounted for by WMS-IV's T/F recognition measure and not at all accounted for by free recall alone.

Methods

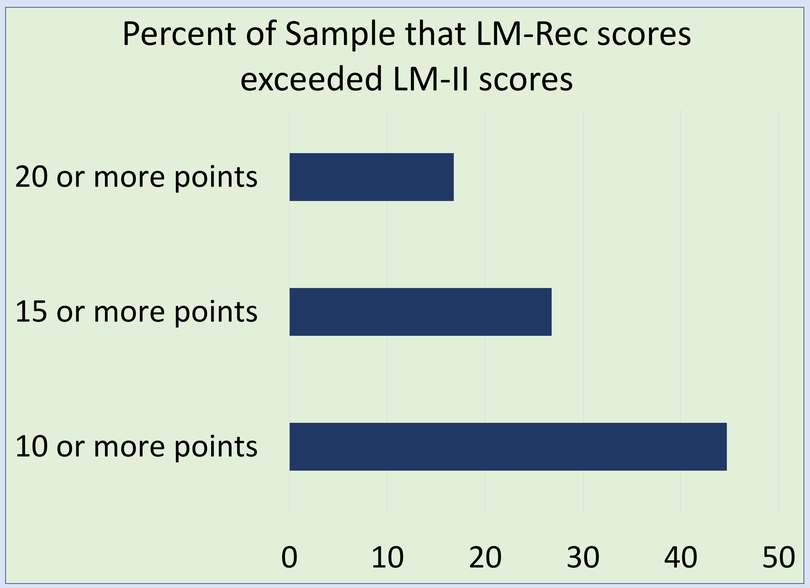
- Participants were administered the Halstead-Russell Neuropsychological Test Battery – Revised (HRNES-R).
- Protocols were screened for performance invalidity.
- LM-REC was administered following delayed free recall (LM-II).
- Differences between scaled scores on LM-REC and LM-II were examined to differentiate between storage and retrieval efficiency.

Table 1. Mean Scaled Scores of LM-II and LM-REC



Participants

- 664 outpatient neuropsychology referrals
- 60% women, 84% white, non-Hispanic, Average Age: 60.4 ± 15.7, Education: 14.9 ± 2.9 years, & Referrals: 81% Neurology



Results

- Table 1 displays the percent of the sample in which LM-REC scores exceeded LM-II scores where 10 points is 1 standard deviation.
- The sample was divided into 2 groups.
  - **Group 1:** (n = 297) < 10-point benefit
  - **Group 2:** (n = 226) ≥ 15-point benefit
- Table 2 displays the mean scaled score gain from free recall to recognition for both groups.
  - In Group 1, free recall on LM-II 97.7 ± 12.5 and recognition on LM-REC scores 101.5 ± 12.2 were both in the normal range.
  - For Group 2, LM-II was 73 ± 12.4 in the moderate impairment range and LM-REC was 95.3 ± 11.4 in the upper part of the borderline range.

Conclusions

1. The WMS-IV 30-item True-False recognition subtest has limited clinical utility due to its substantial measurement error. The use of norms does not resolve the subtest's issue with poor reliability and validity.
2. LM-REC reduces the error variance and measurement bias associated with guessing on the existing dichotomous recognition measure.
3. A substantial percentage of neuropsychological referrals performed poorly on free recall (LM-II) due to a significant retrieval problem. In these cases, more details were stored in memory than was suggested by their free recall performance.
4. This information has important implications regarding the underlying neural substrate, pathology, and recommendations for intervention.