ELSEVIER

Alternate forms of prose passages for the assessment of auditory–verbal memory

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Abstract

Logical memory (LM) is the most frequently administered subtest from the Wechsler Memory Scale; however, the lack of alternate equivalent forms for this subtest may limit its clinical utility. Six new paragraphs modelled on LM stories were developed. Stories were matched on attributes such as number of words and readability. Passage attributes for the six stories were compared with those of standard LM stories (WMS-R and WMS-III versions) to examine story equivalence. The psychometric properties of new passages were also calculated to assess task difficulty and interrater reliability. Results from these analyses suggest a high degree of overlap between the attributes of the new stories and some interesting discrepancies between passage attributes of WMS-R and WMS-III LM stories. In addition, interrater reliability of new passages was found to be excellent (at least .97), and when combined into three sets of passage-pairs, these pairs were found have equivalent difficulty. To reduce the potential for practice effects by use of alternate forms, these new logical memory-style passages may facilitate repeat assessment of auditory–verbal memory.
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There appears to be a growing need to develop alternate forms of tests given recent claims that repeated administration of neuropsychological tests is now "commonplace" (Benedict & Zgaljardic, 1998). In recognition of this need, there have been several papers describing the development of alternate forms of a number of neuropsychological tasks and subtests. Examples include the Wisconsin Card Sorting Test (Ferland, Ramsay, Engeland, & O'Hara, 1998), Boston Naming Test (Fastenau, Denburg, & Mauer, 1998), Auditory Verbal Learning Test (Uchiyama et al., 1995), Expanded Halstead–Reitan Neuropsychological Test (Dikmen,

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Heaton, Grant, & Temkin, 1999) and other non-memory verbal and spatial processing tasks (Watson, Pasteur, Healy, & Hughes, 1994; Zgaljardic & Benedict, 2001). It should also be noted that whilst the existence of alternate forms for popular tests such as the Auditory Verbal Learning Test and LM is not new (see Crawford, Stewart, & Moore, 1989; Lezak, 1995), there appears to be increasing recognition of the need to empirically demonstrate equivalence across forms and characterize the psychometric properties of alternate forms of tests more fully than may have been the case previously.

LM is one of the tests that has been the focus of efforts to develop psychometrically equivalent forms (e.g., Morris, Kunka, & Rossini, 1997). Given that this test is one of the most frequently used subtests from the Wechsler Memory Scale (WMS) in North America (Butler, Retzlaff, & Vanderploeg, 1991) and Australia (Sullivan & Bowden, 1997) and it has relatively good psychometric properties (Spreen & Strauss, 1998), this focus is perhaps not surprising. In addition, the susceptibility of LM to substantial practice effects has been well documented (e.g., Benedict & Zgaljardic, 1998), further highlighting the need for alternate forms of this test.

The "Morris revision" of LM consists of two alternate paragraphs designed to be psychometrically equivalent to the WMS-R stories (Morris et al., 1997). These paragraphs feature Greg and Martha, respectively. Morris and colleagues attempted to match their stories with the WMS-R stories on a number of passage attributes, such as the number of scorable ideas, subjective passage attributes (specifically novelty and affective tone), readability, interscorer reliability, and correlation between story pairs. The results of comparisons conducted by Morris et al. (1997) suggest these authors generally succeeded in generating a pair of stories that match the WMS-R Logical Memory (LM-R) passages. For example, no significant differences were found on sets of stories administered in a serial counterbalanced fashion (i.e., Anna + Robert followed by Greg + Martha, or vice verse). Second, significant positive correlations were found between sets of stories indicating a moderate-to-strong association between test sets.

The Morris et al. (1997) analysis also revealed some significant discrepancies on selected passage attributes *between* LM-R stories (e.g., The Anna Thompson story has fewer (half as many) longer sentences and a more complex grammatical structure than the Robert Miller story). The Morris stories reflect the inequities of the WMS-R passages in terms of such attributes (e.g., the Greg story also has fewer[1] longer sentences than the Martha story).

The development of the Morris stories was reported as a pilot study (Morris et al., 1997, p. 371) and it has helped to highlight the need for alternate forms of the LM stories. However, the Morris stories could only be matched to the LM-R stories since the WMS-III LM stories had yet to be published (Wechsler, 1997a, 1997b). Whilst it must be acknowledged that some clinicians may still be using the WMS-R (Tulsky & Ledbetter, 2000) and for such clinicians the Morris revision may be continue to provide a useful alternate form of LM, the WMS-III is generally regarded as a significant improvement over earlier versions of this scale (Axelrod, 2001; Ryan, Ament, & Arb, 2000) and alternate versions of WMS-III stories are needed.

Further, although the early work of Morris et al. was important because it provided neuropsychologists with alternate LM-R stories, a suite of more than two alternate stories may be needed. For example, neuropsychologists needing to track recovery of function throughout the

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[1] Half as many.