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Dr. Theofilidis Antonis *

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Mini-Review Article

Memory Basic Clinical Tests

Dr. Theofilidis Antonis *

Clinical Neuropsychologist, AHEPA Hospital - Aristotle University of Thessaloniki, Greece.

***Correspondence Author:** Dr. Theofilidis Antonis, Clinical Neuropsychologist, AHEPA Hospital - Aristotle University of Thessaloniki, Greece.

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Abstract

Assessment of cognitive abilities usually involves the use of weighted assessment tools. The choice of tests varies depending on the training and experience of the examiner, the purpose of the assessment, the general condition of the patient, and the time available. The objectives of the examination play a role in the selection of tests. These include developing an accurate picture of the levels of cognitive function or intact abilities that can be used in compensation, the person's ability to perform daily activities, an assessment of the person's ability to participate in rehabilitation. Memory in almost all its dimensions is one of the basic cognitive functions evaluated in almost all cases of patients with neurological or psychiatric symptoms. An attempt was made to list some of the basic tests that assess the dimensions of memory in a clinical context.

Keywords: clinical assessment memory

Summary

Methods of evaluating memory deficiencies

Benton Visual Retention Test. (Sivan, A. B. 1992).

The BVRT is a test designed to assess visual perception, visual memory, and visual-constructional abilities. The manual provides IQ-corrected norms for individuals ranging in age from 15 to 69 years. The test also has norms for four alternative methods of administration, and has three alternative forms. Each shape consists of 10 different pages, with each page containing one or more shapes. Under the most common administration condition, subjects attempt to reproduce the shapes from memory after the pattern is presented for 10 seconds. Performance on the tests yields two scores characterizing both the overall number of correct reproductions and the number of incorrect reproductions of the type of errors the subject is likely to make, the lack of time-lag recall and recognition modules limits its applicability as a comprehensive test of visual memory.

California Verbal Learning Test-Adult Version *(CVLT. Delis, Kramer, Kaplan, &Ober, 1987).*

The CVLT is a list learning task similar to the Rey Auditory Verbal Learning Test (RAVLT). However, the CVLT provides a more comprehensive assessment of memory and learning by administering additional semantically cued tests that are not part of the RAVLT. The CVLT is designed to assess the strategies and processes involved in learning and recalling verbal material, and the manual provides norms for subjects ranging in age from 17 to 80 years. The test can assess both free recall and recognition of material through repeated presentations of word lists. In addition, the words in the lists are drawn from four semantic categories that allow the examiner to gain awareness of the encoding strategies used by the subject during the examination. The test was specifically designed using a cognitive process approach (Delis et al., 1987) in an attempt to determine the specific types of problems in patients in order to provide detailed information for routing rehabilitation strategies. Consequently, an advantage of the test is that it provides numerous results that are specifically tailored to examine the strategies that a subject may have used in attempting to recall information.

Testing complex shapes - TCS is a drawing visualization task in which subjects are asked to copy a figure from memory one to three minutes later, and to retrieve it again from memory 20 to 60 minutes later (Spreen & Strauss, 1998). There is a variety of variation in the time lag periods, the composition of specific shapes, the scoring method, and the available regulatory data. Its grants that include identification elements give the opportunity to differentiate between the difficulty of copying the shape and the difficulty of remembering the work. In addition, qualitative interpretations of replays can provide insight into the nature of the memory deficits a patient may be experiencing.

Memory Assessment Scales *(MAS- Williams, 1991)*

MASs were designed to assess attention and concentration, learning and immediate memory, and memory after a time delay (Williams, 1991) MASs allow assessment of both visual and verbal ability and include free recall and acknowledgment schemes. This allows certified raters to provide interpretations of what memory processes may be deficient in a poor

performer. The test consists of 12 subtests: list learning, text recall, list recall, verbal memory span (task of a number of occupations), visual memory span (sequential aiming task), visual recognition (for geometric shapes), visual reproduction (for geometric shapes), persons-names (a project of composition of names and persons). Time-delayed list recall, time-delayed text recall, time-delayed visual recognition, and time-delayed face-name recall. The test provides a total score, process scores, and scaled scores for each subtest in an attempt to test the strategies used by patients. However, these summary scores do not include memory scores after a time lag. Research has shown that the MAS assesses different conceptual constructs than the Revised Wechsler Memory Scale, indicating that caution is needed when interpreting summary results for each of these memory scales (Golden, White, Combs, Morgan, & McLane, 1999). However, the ability to examine individual subtest scores as well as processing scores offers the opportunity to make specific recommendations that work on functional deficits that may be evident in the testing session.

Rey Auditory Verbal Learning Test *(RAVLT - Rey, 1964)*

The RAVLT is a list learning task that has multiple administration variations, although the administration modes described by Lezak (1995) are probably the most common (Spreen & Strauss, 1998). The task involves the repeated presentation of a list of words and has both free recall and recognition tests just like the CVLT. However, unlike CVLT, RAVLT does not include words from clearly distinct semantic categories. Therefore, it is difficult to speculate about encoding strategies that may have been adopted by the patient. However, this lack of semantic categories may make it preferable to the CVLT in cases where clinicians are simply interested in list learning capabilities and wish to distinguish these capabilities from the concept organization capabilities elicited by the CVLT (Lezak, 1995). There are a variety of published rules available for applying the test. A thorough review of these rules is the handbook by Spreen Strauss (1998).

Wechsler Memory Scale

The WAIS is one of the most common memory tests used by rehabilitation professionals and is a substantial revision of the previous version of the Wechsler Memory Scale-Revised test (Wechsler, 1987). The test was weighted for subjects ranging in age from 16 to 89 years. The assessment is based on the measurements of 11 subtests, of which 6 are part of the core array and 5 are optional. The subtests are combined to obtain index scores for immediate and delayed auditory memory, immediate and delayed visual memory, a summary score for immediate memory that includes and visual and auditory components, a summary score for delayed memory that includes both visual and auditory components, an index score for auditory recognition, and an index score for working memory (working memory). In addition, there are composite auditory processing scores that provide information on the rate of material acquisition, information retention, and information retrieval (Wechsler, 1997). The tasks that make up the subtests are varied, and include: recall of short stories, recall of word lists, recall of word pairs by hint, face recognition, recall of important scenes. shape recall, recall of combined letter and number sequences, and recall of a visuospatial sequence of positions. The test is designed to provide the ability to assess encoding, consolidation, and retrieval processes by examining and comparing scores. Consequently, a recovery environment can be used as an operational tool. However, there is concern arising from the composite of some visual scores because of the potential variability in some skills that may be measured by the visual subtests (Millis, Malina, Bowers, & Ricker, 1999). In attempting to make functional recommendations within a rehabilitation setting, it may be more useful to focus on subtests and processing scores than to rely solely on summary scores.

Wide Range Assessment of Memory and Learning *(WRAML- Adams& Sheslow, 1990)*

The WRAML is a memory test designed to be used in children aged 5 to 17 years. The test includes nine subtests designed to assess verbal memory, visual memory, and learning based on repetition of information. Three tests for each function are combined to form a Visual Memory Index (comprised of number and letter repetition, sentence repetition, and narrative recall), a Visual Memory Index (comprised of spatial pattern recall, pattern memory, and picture recall), and a Learning Index (consisting of list learning, recall of shape positions, and recall of sound and symbol relationships). Estimates of time-lag recall are provided by narrative recall, catalog learning, sound-symbol relations, and figure location. There is an additional recognition scheme for narrative memory, although no standardized score is provided for this part of the test. The scores define a descriptive ranking system (atypical, marginal, low appreciation, average, strong appreciation). Care must be taken in the use of ratings indicators since the factor analysis does not fully support the composition of the rating indicators (Burton, Donders, & Mittenberg, 1996). However, the variety of test formats allows examination of strengths and weaknesses in auditory and visual formats, as well as some assessment of processing strengths and weaknesses.

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