A Brief Review of Current Neurological Brief Tests

Abstract

There are a vast number of different types of brief neurological screening tests. Many clinicians are not aware of the vast number of scales and tests and some clinicians have specific realms that they want to investigate. This paper will cursorily review a number of these papers and provide a brief overview of each.

The number of individuals suffering from head injury, concussion, stroke, Alzheimers and a variety of other brain based conditions appears to be increasing. This paper will cursorily review some of the main brief screening instruments and rating scales and will provide a brief overview of each.

1) The Bender Gestalt II has recently been revised and has been thought to be a very underutilized tool in brief neurological screening (Shaughnessy, 2018a). The reasons and rationale for the revision were discussed in Brannigan and Shaughnessy (2013) and additional information regarding the revision is available in Brannigan & Decker (2003). Shaughnessy (2018b) has also provided an overview of the utilization of the Bender Gestalt II as part of the psychiatric examination. Piotrowski (2016) has further examined the use of the Bender Gestalt test worldwide.

2) Dementia Rating Scale (DRS) was developed by Steven Mathis is a fairly short but comprehensive measure that evaluates cognitive status in adults that are thought to have

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some sort of cortical impairment, specifically of the degenerative type. This test does measure cognitive function at various lower levels, so as to cope with floor effects, and is thought to evaluate the ongoing progression of neurological, behavioral, pathological and cognitive decline. The subtest of this test measure attention, conceptualization, initiation, perseveration and construction and the test- retest reliability if this test is .97 Split half reliability is .90 and this is for ages 65-81 years old and apparently it takes 15-45 minutes to administer. DRS can be given in a variety of setting and the DRS correlated with WMS memory quotient (.70) and the WAIS Full Scale IQ (.67)

3) The Severe Impairment Battery (SIB) was developed by Judy Saxton, A.A. Swihart and F. Boller. This measure examines cognitive abilities at the lower end and allows for the very specific cognitive and behavioral deficiencies associated with severe dementia. This takes about 20 minutes and is for individuals 51-91 and takes about 20 minutes to administer.

4) The Recognition Memory Test (RMT) was developed by Elizabeth Warrington and this allows the examiner to fairly quickly distinguish between left and right hemisphere brain damage and is also sensitive to detect minor aspects of memory deficits. There are two simple subtests- the RMW (Recognition Memory for Words and Recognition Memory for Faces and this test is for adults 18---70 years old and takes about 15 minutes to administer.

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4) The Rey Complex Figure Test and Recognition Trial is authored by John E. Meyers and Kelly R. Meyers and this measure attempts to capture five specific domains of neuro-psychological functioning: Visuospatial recall memory, visuospatial recognition memory, response, bias, processing speed and visuospatial constructional ability. This test specifically attempt to examine the relative aspects of encoding, storage and retrieval processes as they relate to memory performance, and further allows for discrimination between poor performance due to motor impairment from memory impairment. It is for ages 6--89 and is administered individually and takes approximately 45 minutes to administer. Inter-rater reliabilities range from .93 to .99 and test-retest reliability coefficients of the memory parts are from .76 to. 89.

5) The Kaufman Short Neuropsychological Assessment Procedure was developed by Alan and Nadeen Kaufman and this brief assessment is designed to explore the mental functioning of both adolescents and adults. It can be given to children of age 11 and to adults up to 85 years. All items were critically reviewed for cultural bias and there are 4 subtests- which appear to be organized in three specific levels of cognitive complexity- attention orientation (Mental status) Simple memory and perceptual skills (Number Recall and Gestalt Closure) and Complete intellectual functioning and planning ability as assessed by 4- Letter words tests. While the test can be given by a range of personnel, the interpretation should be made only by trained personnel and professionals who are competent in this realm.

6) RUFF Figural Fluency Test (RFFT) developed by Ronald M. Ruff was designed to provide specific clinical information as to nonverbal capacity for fluid and or divergent thinking, and the specific ability to shift from cognitive set and the executive capacity to

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address this process. b. This is for ages 16-70- years and takes about 5 minutes and the manual provides review of validity and recent research.

7) Cognistat (Neurobehavioral Cognitive Status Examination was developed by Ralph J. Kiernan, Jonathan Mueller and J.William Langston and is specifically set up to evaluate 5 major ability domains- Language- speech, comprehension, repetition and naming enable clinicians to very quickly identify any major aphasic aspects, Constructional Ability, Memory, calculation Skills, Reasoning and Judgment (which is divided into similarities and judgment as well as some specific factors such as attention, orientation, sensorium/level of consciousness.

8) Stroop Neuropsychological Sceening Test (SNST) was developed by Max R Trenerry, Bruce Crosson, James DeBone and William Leber and is for adults 18-79 years and can be administered in 4 minutes. This test must be timed.

9) The Brief Neuropsychological Cognitive Examination was developed by Joseph M. Tonkonogy and attempts to evaluate the major cognitive aspects of functioning and provide a global overview . This is for individuals 18 years and older and can be administered in about 30 minutes. There are 10 subtests and only minimal reading skills are required.

10) The SPANS (Short Parallel Assessments of Neuropsychological States) is a brief battery

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of neuropsychological tests which has been found helpful in the assessment of acquired brain injury, mental capacity and various other neurological disorders. It is used for individuals 18-74 years , and provides seven index scores which include orientation, Concentration/Attention, Language, Memory Learning, Visuo Motor Performance, Efficiency and Cognitive Flexibility. There are two alternative versions (SPANS A AND SPANS B) for retest purposes. Dr. Gerald Burgess is the author and he provides a 45 overview online of the SPANS

RATING SCALES

1) Cognitive Behavior Rating Scales (CBRS)- Research Edition was developed by J. Michael Williams and is thought to be a good adjunct to a full neuropsychological examination. There are 9 CBRS scales- Language Deficit , Agitation, Need for Routine, Depression, Higher Cognitive Deficits, Memory Disorder, Dementia, Apraxia and Disorientation. This rating scales is for ages 30-89 and the purpose of this is to examine and document the presence and severity of cognitive impairment and takes about 15-20 minutes .

MEMORY-

1) Memory Assessment Scales (MAS) is for individuals 18-90 years and takes about 40-45 minutes and is designed to assess short-term verbal and visual memory. There are 12 subtests based on seven specific memory tasks- Verbal span, List Learning, Prose

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Memory, Visual Span, Visual Recognition, Visual Reproduction and Names- Faces. The validity data shows that MAS scores can distinguish normal average from neurologically impaired clients . There is also an MAS Computer Report that will calculate MAS Summary Scale Scores and Global Memory Scores and then list percentile scores and or standard scores . J. Michael Williams is the author of this test

2) The Children's Memory Scale (CMS) by Morris Cohen, Ed.D. attempts to provide a fairly comprehensive picture of cognitive ability in children and adolescents and link learning and memory specifically to I.Q.
This is for children and adolescents 5--16 years of age and takes about 30 minutes to administer. There is a software assistant for this scale. This also includes strategies for intervention based on pattern of performance and the clients' CMS scores.

3) Donald E. Traham and Glenn J. Larrabee developed the Continuous Visual Memory Test (CVMT) and this can be given to ages 7---80 and more years. The test has been used in clients/patients with unilateral right hemisphere, those with Alzheimer's and those who have had a severe head injury or trauma.

4) The Recognition Memory Test (RMT) assists in the determination of right or left hemisphere brain damage, and is for adults aged 18-70 years and can be given in 15 minutes..Elizabeth K. Warrington is the author and there are two simple subtests- Recognition Memory for Words, and Recognition memory for Faces.

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Visual Memory-

1) The Continuous Visual memory Test (CVMT) was developed by Donald E. Trahan and Glenn Larrabee and contains three seepage tasks for evaluating visual memory. The purpose of the test is to assess visual memory and is for ages 7-80+ years. The Visual Discrimination Task separates out visual discrimination weaknesses from visual memory problems.

2) The Benton Visual Retention Test (BVRT) is now in it's 5th edition and it measures visual perception, visual memory and " visuoconstructive abilities, and is for ages 8 to adult. There are three "almost "equivalent forms- C D and E and 4 possible methods of administration. This test now in it's fifth edition has been extensively utilized and researched over many years.

3) There is a comprehensive evaluation of both learning and memory in the Wide Range Assessment of Memory and Learning (WRAML) developed by Wayne Adams and Davis Sheslow and this is for ages 5-17 years and takes approximately one hour to administer. Embedded in this is a brief screening part which can be given in about 15 minutes. There are 3 verbal, 3 visual and three learning subtests and provide an index for Verbal Memory, Visual Memory and Learning.

4) The Test of Memory and Learning (TOMAL) developed by Cecil R. Reynolds and Erin D. Bigler is specifically for children and adolescents 5-0 to 19.11 years and takes about one hour to administer. This test provides memory scores for a) Verbal Memory, NonVerbal Memory, Delayed recall and a composite memory index as well as

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supplemental composite scores which include a learning index, attention and Concentration Index, a Sequential Memory Index, Free Recall Index and an Associate Recall Index.

ATTENTION

1) The test of Everyday Attention (TEA) was developed by Ian H. Robertson, Tony Ward, Valerie Ridgeway and Ian Nimmo-Smith and is for individuals 18-80 and takes approximately 45 minutes to an hour to administer. it assesses there aspects of attention (elective attention sustained attention and attentional switching.) The TEA subtests are " Map Search , Elevator Counting, Elevator Counting with Distraction, Visual Elevator, Auditory Elevator with Several, telephone Search , Telephone Search Dual Task and Lottery. This test has been utilized and validated with stroke patients, closed hear injury and Alzheimer's disease.

2) The Test of Everyday Attention for Children (TEA-CH) developed by Tom Manly, Ian Robertson, Vicki Anderson and Ian Nimmo-Smith is specifically for ages 6-16 and takes approximately one hour to administer. This test contains nine subtests which attempt to evaluate children's ability to a) selectively attend, divide their attention between two separate tasks, inhibit verbal and motor responses, sustain their attention and lastly to switch attention from one factor or variable to another. There are two parallel forms which allow for re-testing of the same child.

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3) The BTA (Brief Test of Attention) by David Schretlen is for non-phasic hearing adults ages 17-84 and can be administered in 10 minutes of less. There are two forms N (Numbers and Form L (Letters). It should be emphasized that this is a brief test of attention and the two parallel forms are presented via audio cassette for standardization purposes.

4) The Ruff 2 and 7 Selective Attention Test developed by Ronald Ruff and C. Christopher Allen was developed to assess and evaluate sustained and selective attention. It is for individuals 16-70 years and can be individually administered in approximately 5 minutes. A stopwatch is required for the administration of this test.

Questionnaires-

1) The Child Neuropsychological Questionnaire is a 41 item questionnaire that is utilized with children that are suspected of some type of brain dysfunction. This can be part of a total examination for examining the signs and symptoms that may possibly suggest neurological impairment. This questionnaire was developed by Fernando Melendez and comes with a short manual that reviews the results in light of referral decisions.

2) The Adult Neuropsychological Questionnaire, also developed by Fernando Melendez is a 59 item questionnaire which can be done in about 10 minutes, and which can be employed to decide on appropriate referrals for a more in depth comprehensive examination. it is thought to be a helpful aid to a general intake examination and mental status examination and reflects on signs and symptoms that may possibly indicate

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underlying brain difficulties.

Summary and Conclusions

This brief paper has attempted to provide a brief overview of some of the brief neurological tests available to clinicians working with children adolescents and adults with brain injury, stroke, concussion or Alzheimer's. It is not an exhaustive list as there are probably other rating scales available for other specific reasons.

References

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