Advanced Clinical Solutions
FOR WAIS®-IV AND WMS®-IV

Advanced Clinical Solutions

Serial Assessment Case Studies

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Case Study 1

Client C is a 62-year-old White male who was referred by his family physician for neurological evaluation subsequent to complaints of increasing memory loss over the past couple of years. His wife confirms that he seems more forgetful and has missed appointments and failed to pay bills on time. Prior to meeting with the neurologist, a neuropsychological evaluation was performed. The initial results of testing are presented in Figure 6.1. These results, while not conclusive, suggested possible mild cognitive impairment. Neurological evaluation and brain imaging were inconclusive. Client C was started on a trial of medication to help slow the rate of memory decline. The neurologist ordered a repeat neuropsychological assessment in 6 months to evaluate for further deterioration in cognitive functions.

Figure 6.1 presents re-test data and reliable change scores. The examiner reported critical values at the .01 level. General intellectual functioning (FSIQ) declined by 16 points, which is significantly greater than expected, given Client C's initial performance, and occurred in less than 1% of the serial assessment sample. The changes were specifically related to the Perceptual Reasoning and Processing Speed Indexes, which were both significantly lower than predicted, at a level that is atypical in the serial assessment sample. At the subtest level, scores significantly declined for Block Design, Information, Symbol Search, and Coding.

On the WMS®-IV, all of the indexes were significantly lower than expected at the .01 level, except the Visual Working Memory Index. Base rates indicate that the loss in memory functioning from Time 1 to Time 2 is atypical when compared to the serial assessment sample. All the subtest scores were significantly lower than expected and have low base rates, except Designs II, Spatial Addition, and Symbol Span. The results indicate that verbal and working memory skills have not significantly declined but visual memory, processing speed, and visual perceptual skills have declined.

Client C was diagnosed with mild cognitive impairment. Re-evaluation was recommended to determine if a diagnosis of dementia was warranted. The results also indicated that Client C was not responding to his medication, and a new prescription was recommended.

Serial Assessment Score Report

Examinee Name	Client C	Date of Report	11-11-09

Test	Retest	Test-Retest Interval
WAIS-I V (05-08-2009)	WAIS-I V (11-10-2009)	00 years 06 months 02 days
WMS-–IV (05-08-2009)	WMS- IV (11-10-2009)	00 years 06 months 02 days

WAIS-IV Composite Comparisons

Composite	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
FSIQ	104	92	108	–16	7.55	Y	< 1
VCI	110	105	112	–7	10.68	N	
PRI	104	96	109	–13	11.41	Y	5
WMI	105	97	103	–6	12.63	N	
PSI	92	71	97	–26	16.14	Y	< 1

WAIS-IV Subtest Comparisons

Subtest	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
VC	12	11	12	–1	2.56	N	
SI	11	12	12	0	3.66	N	
IN	13	10	13	–3	2.78	Y	1–2
BD	9	7	11	–4	3.59	Y	2
MR	11	10	12	–2	3.10	N	
VP	12	11	12	–1	3.18	N	
AR	12	10	12	–2	3.50	N	
DS	10	9	10	–1	2.66	N	
CD	8	5	9	–4	3.80	Y	1–2
SS	9	4	10	–6	4.38	Y	< 1

WMS-IV Index Comparisons

Index	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
AMI	89	70	102	–32	11.30	Y	< 1
VMI	86	71	88	–17	10.06	Y	2–5
VWMI	97	91	103	–12	13.31	N	
IMI	86	69	93	–24	11.41	Y	< 1
DMI	82	66	91	–25	13.31	Y	< 1

WMS-IV Subtest Comparisons

Subtest	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
LM I	8	5	11	–6	3.91	Y	< 1
LM II	7	5	10	–5	3.59	Y	1–2
VPA I	9	6	11	–5	2.64	Y	1
VPA II	7	4	9	–5	4.16	Y	1
DE I	7	4	8	–4	3.78	Y	2–5
DE II	8	5	8	–3	3.78	N	
VR I	8	6	9	–3	2.50	Y	10–15
VR II	8	6	10	–4	1.61	Y	5
SSP	9	8	10	–2	3.47	N	
SA	10	9	11	–2	2.94	N	

Figure 6.1 ACS Reliable Change Data for Client C

Case Study 2

Client F is a 34-year-old White female who completed 12 years of education. In the fall of 2008, Client F was in a serious motor vehicle accident and suffered a severe traumatic brain injury. She lost consciousness for approximately 2 days and had posttraumatic amnesia for 3 weeks. In the initial phases of her recovery, she was mildly aphasic, had significant memory impairment, and was very irritable and impulsive. She was first assessed at 6 months post-injury, in the spring of 2009. Figure 6.2 presents her test scores for the initial and subsequent follow-up examination.

The initial assessment indicated average verbal skills, which were consistent with the recovery of her verbal abilities after an initial period of being mildly aphasic. Her overall abilities were in the borderline range, as were auditory working memory and visual perceptual skills. Her processing speed was in the deficient range. On the WMS®-IV, her memory functioning was in the deficient range for all indexes. Client F was recovering some behavioral control but remained easily frustrated and impulsive. She continued to participate in her rehabilitation program for her physical injuries, cognitive/daily living deficits, and for behavior management.

Client F was re-evaluated in the fall of 2009 to determine if she was improving cognitively. Her physical injuries had healed and her impulsivity and irritability had improved with medication treatment. Overall, she was functioning better at home and able to take care of most of her own daily living needs. She still required some direction and assistance when cooking, shopping, and washing clothes. The results of her evaluation indicated a significant improvement (.05 level) in overall intellectual functioning (FSIQ). The increase in performance is observed in 5% of the serial assessment sample. At the index level, she showed significant improvement in auditory working memory. At the subtest level, she did not show significant improvement.

On the WMS-IV, her index scores improved about 12 points on average. Despite the seemingly large gain in her test scores, only the Visual Memory Index was significantly improved from the previous assessment. When practice effects and regression to the mean effects were accounted for, her increase in performance was not particularly large. At the subtest level, only the Logical Memory I and Visual Reproduction I scores were significantly better at the second assessment. The results suggest that while Client F may be experiencing a general improvement in cognitive functioning (FSIQ), corroborated by her ability to perform most tasks without assistance, she still has ongoing memory and processing speed difficulties. She remains on long-term disability through her employer due to her inability to work.

After the evaluation, Client F was discharged from her daily rehabilitation appointments but maintained her weekly appointment with the psychologist and bi-monthly evaluations with her neurologist. She did not require in-home assistance as her family members were able to support her sufficiently with daily tasks.

Serial Assessment Score Report

Examinee Name	Client F	Date of Report	12-10-09

Test	Retest	Test-Retest Interval
WAIS-I V (04-08-2009)	WAIS-I V (12-10-2009)	00 years 08 months 02 days
WMS- IV (04-08-2009)	WMS-–IV (12-10-2009)	00 years 08 months 02 days

WAIS-IV Composite Comparisons

Composite	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
FSIQ	72	83	75	8	5.73	Y	5
VCI	93	96	96	0	8.11	N	
PRI	79	90	87	3	8.67	N	
WMI	74	86	75	11	9.59	Y	5–10
PSI	62	76	73	3	12.26	N	

WAIS–IV Subtest Comparisons

Subtest	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
VC	8	9	8	1	1.95	N	
SI	9	9	9	0	2.78	N	
IN	9	10	9	1	2.11	N	
BD	6	8	8	0	2.73	N	
MR	7	8	8	0	2.36	N	
VP	6	9	8	1	2.41	N	
AR	5	7	6	1	2.66	N	
DS	6	8	6	2	2.02	N	
CD	4	6	6	0	2.89	N	
SS	2	5	5	0	3.33	N	

WMS-IV Index Comparisons

Index	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
AMI	67	77	83	–6	8.59	N	
VMI	69	82	73	9	7.64	Y	15
VWMI	56	73	67	6	10.11	N	
IMI	69	77	78	–1	8.67	N	
DMI	60	76	72	4	10.11	N	

WMS-IV Subtest Comparisons

Subtest	Time 1 Actual	Time 2 Actual	Time 2 Predicted	Time 2 Actual–Predicted Difference	Critical Value	Significant Difference	Base Rate
LM I	5	6	9	–3	2.97	Y	10
LM II	4	6	8	–2	2.72	N	
VPA I	6	7	8	–1	2.00	N	
VPA II	3	5	6	–1	3.16	N	
DE I	4	5	7	–2	2.87	N	
DE II	3	7	5	2	2.87	N	
VR I	7	8	7	1	1.90	N	
VR II	6	8	8	0	1.22	N	
SSP	5	6	7	–1	2.64	N	
SA	5	5	6	–1	2.24	N	

Figure 6.2 ACS Reliable Change Data for Client F

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