

Appendix Table 1 Scores on Assessment of Cognitive Function, Depression, and Quality of Life (Analyses for Intention-To-Treat Using the Last Observation Carried Forward Method)

Outcome	CTI Group (n=44)		Wait-list group (n=42)	
	Mean	(95% CI)	Mean	(95% CI)
Global cognitive function				
TMSE at T0	28.84	(28.42, 29.26)	28.83	(28.50, 29.16)
TMSE at T1	29.30	(28.99, 29.60)	28.71	(28.34, 29.09)
TMSE at T2	29.00	(28.59, 29.41)	28.67	(28.26, 29.08)
Cognitive function in each domain				
<i>Attention-concentration</i>				
DSF at T0	8.48	(7.78, 9.18)	8.40	(7.74, 9.07)
DSF at T1	9.05	(8.33, 9.76)	8.29	(7.61, 8.96)
DSF at T2	9.36	(8.67, 10.06)	8.98	(8.36, 9.59)
<i>Working memory</i>				
DSB at T0	6.05	(5.34, 6.75)	5.17	(4.57, 5.76)
DSB at T1	6.18	(5.49, 6.87)	5.29	(4.74, 5.83)
DSB at T2	6.66	(5.82, 7.50)	5.29	(4.58, 5.99)
<i>Verbal memory</i>				
WLLT at T0	7.73	(7.38, 8.07)	7.43	(7.09, 7.76)
WLLT at T1	7.80	(7.43, 8.16)	7.56	(7.23, 7.90)
WLLT at T2	8.02	(7.61, 8.42)	7.91	(7.56, 8.26)
<i>Psychomotor speed[‡]</i>				
TMT-A time at T0	47.64	(42.63, 52.64)	49.21	(44.0, 54.43)
TMT-A time at T1	45.95	(41.84, 50.06)	49.00	(42.87, 55.13)
TMT-A time at T2	42.32	(37.56, 47.08)	44.36	(37.92, 50.80)
<i>Executive function[‡]</i>				
TMT-B time at T0	134.27	(112.54, 156.01)	124.60	(110.27, 138.92)
TMT-B time at T1	121.48	(104.63, 138.32)	127.69	(109.40, 145.98)
TMT-B time at T2	108.48	(93.61, 123.34)	110.86	(94.60, 127.12)
<i>Visuoconstructional-perceptual ability[‡]</i>				
Constructional praxis at T0	0.30	(0.14, 0.45)	0.38	(0.23, 0.53)
Constructional praxis at T1	0.27	(0.14, 0.41)	0.31	(0.16, 0.46)
Constructional praxis at T2	0.25	(0.12, 0.38)	0.36	(0.19, 0.52)

<i>Delayed recall memory</i>				
Word Recall at T0	7.59	(7.08, 8.10)	7.43	(6.82, 8.03)
Word Recall at T1	7.77	(7.26, 8.28)	7.29	(6.68, 7.89)
Word Recall at T2	8.11	(7.52, 8.71)	7.52	(6.78, 8.27)
<i>Language fluency</i>				
Letter "S" at T0	9.66	(8.31, 11.0)	9.98	(8.58, 11.38)
Letter "S" at T1	10.11	(8.77, 11.45)	9.93	(8.61, 11.25)
Letter "S" at T2	10.27	(8.87, 11.67)	9.81	(8.31, 11.31)
Category fluency at T0	13.16	(11.99, 14.33)	12.40	(11.36, 13.45)
Category fluency at T1	12.86	(11.96, 13.77)	12.48	(11.35, 13.60)
Category fluency at T2	13.48	(12.41, 14.54)	13.02	(11.89, 14.16)
Quality of Life				
TGDS-15 [‡] at T0	2.32	(1.82, 2.81)	2.26	(1.63, 2.90)
TGDS-15 [‡] at T1	1.70	(1.33, 2.08)	1.71	(1.21, 2.22)
TGDS-15 [‡] at T2	1.64	(1.23, 2.05)	1.50	(0.97, 2.03)
OPQOL-brief-Th at T0	20.93	(19.54, 22.32)	21.93	(20.45, 23.41)
OPQOL-brief-Th at T1	21.00	(19.44, 22.56)	21.31	(19.82, 22.80)
OPQOL-brief-Th at T2	22.95	(21.58, 24.33)	22.81	(21.45, 24.17)

Notes: ‡ These neuropsychological tests have reversal scoring which means the lower the score the better the performance.

Abbreviations: CTI, Cognitive training intervention; TMSE, Thai Mental Status Examination; TGDS-15, Thai Geriatric Depression Scale-15; OPQOL-brief-Th, Thai version of Older People's Quality of Life-brief; DSF, Digit span forward; DSB, Digit span backward; WLLT, Word list learning test; TMT-A, Trail making A test; TMT-B, Trail making B test

Appendix Table 2a Scores on Assessment of Cognitive Function, Depression, and Quality of Life
(Analyses for Per Protocol Analysis)

Outcome	CTI Group (n=37)		Wait-list group (n=30)	
	Mean	(95% CI)	Mean	(95% CI)
Global cognitive function				
TMSE at T0	28.80	(28.31, 29.29)	28.70	(28.31, 29.09)
TMSE at T1	29.29	(28.95, 29.62)	28.57	(28.09, 29.04)
TMSE at T2	28.91	(28.43, 29.40)	28.50	(27.96, 29.04)
Cognitive function in each domain				
<i>Attention-concentration</i>				
DSF at T0	8.49	(7.74, 9.23)	8.23	(7.41, 9.06)
DSF at T1	8.97	(8.20, 9.74)	7.90	(7.08, 8.72)
DSF at T2	9.31	(8.51, 10.09)	8.77	(7.98, 9.55)
<i>Working memory</i>				
DSB at T0	6.00	(5.21, 6.79)	5.20	(4.44, 5.96)
DSB at T1	6.51	(5.70, 7.33)	5.27	(4.59, 5.94)
DSB at T2	6.89	(5.92, 7.85)	5.37	(4.46, 6.27)
<i>Verbal memory</i>				
WLLT at T0	7.71	(7.31, 8.12)	7.37	(6.98, 7.75)
WLLT at T1	7.76	(7.34, 8.18)	7.56	(7.16, 7.95)
WLLT at T2	8.02	(7.52, 8.51)	8.13	(7.75, 8.52)
<i>Psychomotor speed[‡]</i>				
TMT-A time at T0	47.38	(41.69, 53.08)	49.77	(43.21, 56.33)
TMT-A time at T1	46.29	(41.30, 50.29)	49.27	(41.21, 57.32)
TMT-A time at T2	42.53	(36.77, 48.29)	44.10	(35.69, 52.51)
<i>Executive function[‡]</i>				
TMT-B time at T0	134.35	(107.67, 161.04)	120.97	(104.36, 137.57)
TMT-B time at T1	116.50	(97.15, 135.85)	128.33	(105.78, 150.88)
TMT-B time at T2	102.94	(86.20, 119.68)	107.80	(89.38, 126.22)
<i>Visuoconstructional-perceptual ability[‡]</i>				
Constructional praxis at T0	0.24	(0.06, 0.42)	0.43	(0.25, 0.62)
Constructional praxis at T1	0.24	(0.09, 0.40)	0.33	(0.15, 0.51)
Constructional praxis at T2	0.21	(0.06, 0.36)	0.33	(0.13, 0.54)
<i>Delayed recall memory</i>				

Word Recall at T0	7.63	(7.06, 8.19)	7.43	(6.74, 8.13)
Word Recall at T1	7.83	(7.26, 8.00)	7.30	(6.64, 7.96)
Word Recall at T2	8.09	(7.37, 8.80)	7.70	(6.81, 8.59)
<i>Language fluency</i>				
Letter "S" at T0	9.41	(7.80, 11.02)	10.27	(8.60, 11.93)
Letter "S" at T1	10.06	(8.52, 11.06)	10.37	(8.75, 11.98)
Letter "S" at T2	10.12	(8.53, 11.70)	9.87	(8.01, 11.72)
Category fluency at T0	13.12	(11.70, 14.53)	12.73	(11.44, 14.03)
Category fluency at T1	13.03	(11.89, 14.17)	12.80	(11.37, 14.23)
Category fluency at T2	13.85	(12.56, 15.25)	13.33	(11.86, 14.81)
Quality of Life				
TGDS-15 [‡] at T0	2.43	(1.84, 3.02)	2.53	(1.82, 3.25)
TGDS-15 [‡] at T1	1.66	(1.23, 2.08)	1.80	(1.30, 2.30)
TGDS-15 [‡] at T2	1.63	(1.18, 2.08)	1.40	(0.90, 1.90)
OPQOL-brief-Th at T0	20.60	(18.93, 22.27)	22.10	(20.46, 23.74)
OPQOL-brief-Th at T1	21.03	(19.18, 22.86)	21.30	(19.62, 22.98)
OPQOL-brief-Th at T2	22.83	(21.19, 24.46)	22.77	(21.25, 24.29)

Notes: ‡ These neuropsychological tests have reversal scoring which means the lower the score the better the performance.

Abbreviations: CTI, Cognitive training intervention; TMSE, Thai Mental Status Examination; TGDS-15, Thai Geriatric Depression Scale-15; OPQOL-brief-Th, Thai version of Older People's Quality of Life-brief; DSF, Digit span forward; DSB, Digit span backward; WLLT, Word list learning test; TMT-A, Trail making A test; TMT-B, Trail making B test

Appendix Table 2b Treatment Effect and Carryover Effect (Analyses for Per Protocol Analysis)

Outcome	CTI Group (n=37)		Wait-list group (n=30)		Mean Difference	(95% CI)
	Mean	(95% CI)	Mean	(95% CI)		
Global cognitive function						
Δ TMSE at T1-T0	0.49	(0.02, 0.96)	-0.13	(-0.58, 0.31)	0.62	(-0.03, 1.26)
Δ TMSE at T2-T0	0.11	(-0.32, 0.54)	-0.20	(-0.72, 0.32)	0.34	(-0.34, 1.02)
Cognitive functions in each domain						
<i>Attention-concentration</i>						
Δ DSF at T1-T0	0.57	(-0.07, 1.17)	-0.33	(-1.28, 0.61)	0.90	(-0.19, 2.00)
Δ DSF at T2-T0	0.83	(0.08, 1.58)	0.53	(-0.20, 1.27)	0.30	(-0.74, 1.33)
<i>Working memory</i>						
Δ DSB at T1-T0	0.46	(-0.45, 0.82)	0.07	(-0.61, 0.74)	0.39	(-0.44, 1.23)
Δ DSB at T2-T0	0.89	(0.19, 1.58)	0.17	(-0.86, 1.19)	0.72	(-0.46, 1.19)
<i>Verbal memory</i>						
Δ WLLT at T1-T0	0.01	(-0.23, 0.46)	0.19	(-0.25, 0.63)	-0.18	(-0.70, 0.34)
Δ WLLT at T2-T0	0.30	(-0.08, 0.69)	0.77	(0.31, 1.22)	-0.46	(-1.04, 0.12)
<i>Psychomotor speed[‡]</i>						
Δ TMT-A time at T1-T0	-1.51	(-6.77, 4.72)	-0.50	(-5.94, 4.94)	-1.01	(-9.22, 7.19)
Δ TMT-A time at T2-T0	-4.85	(-11.36, 1.65)	-5.67	(-11.96, 0.63)	0.86	(-8.12, 9.74)
<i>Executive function[‡]</i>						
Δ TMT-B time at T1-T0	-14.84	(-38.85, 11.22)	7.37	(-10.80, 25.54)	-22.20	(-54.68, 10.27)
Δ TMT-B time at T2-T0	-31.41	(-54.28, -8.55)	-13.16	(-27.63, -1.30)	-18.24	(-45.61, 9.12)

<i>Visuoconstructional-perceptual ability</i> [‡]						
Δ Constructional praxis at T1-T0	0.0	(-0.19, 0.14)	-0.10	(-0.28, 0.08)	0.10	(-0.13, 0.33)
Δ Constructional praxis at T2-T0	-0.03	(-0.19, 0.13)	-0.10	(-0.32, 0.13)	0.07	(-0.20, 0.34)
<i>Delayed recall memory</i>						
Δ Word recall at T1-T0	0.19	(-0.22, 0.60)	-0.13	(-0.68, 0.42)	0.32	(-0.34, 0.98)
Δ Word recall at T2-T0	0.46	(-0.02, 0.93)	0.26	(-0.64, 1.18)	0.19	(-0.77, 1.15)
<i>Language fluency</i>						
Δ Letter “S” at T1-T0	0.43	(-0.81, 1.67)	0.10	(-1.42, 1.62)	0.33	(-1.57, 2.24)
Δ Letter “S” at T2-T0	0.63	(-0.84, 2.10)	-0.40	(-1.97, 1.17)	1.02	(-1.09, 3.14)
Δ Category fluency at T1-T0	-0.22	(-1.37, 0.94)	0.07	(-1.23, 1.37)	-0.28	(-1.99, 1.42)
Δ Category fluency at T2-T0	0.74	(-0.24, 1.71)	0.60	(-0.56, 1.76)	-0.14	(-1.34, 1.61)
Quality of Life						
Δ TGDS-15 [‡] at T1-T0	-0.73	(-1.20, -0.26)	-0.73	(-1.52, 0.05)	0.0	(-0.86, 0.86)
Δ TGDS-15 [‡] at T2-T0	-0.80	(-1.28, -0.32)	-1.13	(-1.77, -0.50)	0.33	(-0.44, 1.10)
Δ OPQOL-brief at T1-T0	0.38	(-1.16, 1.92)	-0.80	(-2.98, 1.38)	1.12	(-1.37, 3.72)
Δ OPQOL-brief at T2-T0	2.23	(0.71, 3.75)	0.67	(-1.61, 2.95)	1.56	(-1.06, 4.18)

Notes: ‡ These neuropsychological tests have reversal scoring which means the lower the score the better the performance.

Abbreviations: CTI, Cognitive training intervention; TMSE, Thai Mental Status Examination; TGDS-15, Thai Geriatric Depression Scale-15; OPQOL-brief-Th, Thai version of Older People’s Quality of Life-brief; DSF, Digit span forward; DSB, Digit span backward; WLLT, Word list learning test; TMT-A, Trail making A test; TMT-B, Trail making B test; T0, at baseline; T1, at 12th week; T2, at 24th week, **P*-value < 0.0