

ABSTRACT SUBMISSION FORM

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CHR D 2020: Abstract Submission Form

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Title

Differences between ratings and tests of executive functioning among children with prenatal alcohol exposure with and without FASD.

Background

Fetal alcohol spectrum disorder (FASD) impacts more Canadians than most other developmental disabilities, with about 4% of Canadians diagnosed with FASD. Diagnosing FASD requires a comprehensive assessment to determine whether an individual has significant differences across at least three brain domains, including executive functioning (EF). EF is often assessed using caregiver ratings and performance-based measures (tests); however, research has found discrepancies between these two forms of measurement of EF.

Objective

The objective of this study was to examine the relationship between caregiver ratings and tests of EF among children with prenatal alcohol exposure (PAE) with and without FASD.

Methods

Caregiver ratings of EF were assessed using the BRIEF2. Tests of EF included measures from the D-KEFS, WISC-V, and WAIS-IV. Descriptive statistics of the sample, independent sample t-tests, and correlations were conducted.

Results

Charts of 90 children with confirmed PAE who completed a psychology assessment at the Manitoba FASD Centre were included in this study (51.1% males; Mage = 10.0 years, SDage = 3.1). 45 children were diagnosed with FASD and 41 did not meet criteria for FASD. Caregiver ratings of EF were not significantly different between children with and without FASD ($p = .149$ to $.993$). Of the 32 test scores that assessed EF, 9 were significantly lower among children with FASD than their counterparts ($p < .001$ to $.041$). Most correlations ($> 93\%$) between caregiver ratings and tests of EF were not significant at $p < .05$ among

children with PAE, with FASD, and without FASD.

Conclusion

Performance on tests of EF better distinguishes children with and without FASD than caregiver ratings of EF. Most caregiver ratings and tests of EF are not significantly related among children with PAE, suggesting that each assessment tool is measuring different aspects of EF. Recommendations for addressing EF-related difficulties should consider the complexities of EF.

Theme:

Community Health / Policy

Do you have a table/figure to upload?

Yes

Untitled

BRIEF2 Tables_Sept 10.pdf

Are you willing to participate in Goodbear's Den?

Yes

Presenter Status:

Non-Trainee

What was your role in the project?

All of the above

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Table 1

Mean Scaled Scores and Ranges for Tests of Executive Functioning

	Total Sample		PAE with FASD		PAE without FASD		<i>t</i>
	Mean (<i>SD</i>)	Range	Mean (<i>SD</i>)	Range	Mean (<i>SD</i>)	Range	
D-KEFS Verbal Fluency Test (VFT)							
Letter Fluency: Total Correct	8.07 (2.87)	2-17	6.92 (2.48)	2-11	9.27 (2.86)	4-17	3.16**
Category Fluency: Total Correct	8.85 (3.16)	1-16	7.65 (2.68)	1-12	9.85 (3.29)	4-16	2.63*
Category Switching: Total Correct Responses	8.40 (2.70)	2-13	7.36 (2.46)	2-11	9.24 (2.59)	2-13	2.63*
Category Switching: Total Switching Accuracy	8.35 (2.76)	1-13	7.35 (2.64)	1-11	9.31 (2.60)	2-13	2.70**
Letter Fluency vs. Category Fluency	9.10 (3.03)	1-14	9.28 (2.41)	3-13	9.16 (3.58)	1-14	-.14
Category Switching vs. Category Fluency	9.48 (3.26)	3-16	9.76 (2.92)	5-16	9.20 (3.66)	3-15	-.60
Set-Loss Errors	8.61 (3.48)	1-13	8.60 (3.96)	1-13	8.83 (3.05)	1-13	.23
Repetition Errors	8.19 (2.63)	1-12	7.56 (3.24)	1-12	8.88 (1.79)	4-12	1.78
Percent Set-Loss Errors	7.35 (4.60)	1-14	7.32 (5.16)	1-14	7.60 (4.18)	1-14	.21
Percent Repetition Errors	8.44 (3.97)	1-13	7.36 (4.54)	1-13	9.68 (3.09)	2-13	2.11*
Category Switching: Percent Switching Accuracy	8.25 (3.49)	1-12	7.83 (3.81)	1-12	8.92 (3.11)	1-12	1.10
D-KEFS Color-Word Interference Test (CWIT)							
Inhibition: Completion Time	7.87 (3.36)	1-13	6.81 (3.39)	1-12	8.57 (3.13)	1-13	1.79
Inhibition/Switching: Completion Time	8.49 (2.55)	1-13	8.24 (2.07)	3-13	8.73 (3.06)	1-13	.61
Inhibition vs. Color Naming: Completion Time	9.58 (3.01)	3-17	9.80 (3.43)	4-17	9.26 (2.77)	3-14	-.57
Inhibition/Switching vs. Combined Naming + Reading: Completion Time	9.68 (2.97)	2-15	10.60 (2.82)	4-15	8.91 (3.07)	2-14	-1.85
Inhibition/Switching vs. Inhibition: Completion Time	10.61 (3.32)	3-18	11.50 (2.72)	6-16	10.09 (3.70)	3-18	-1.39
Inhibition/Switching vs. Color Naming: Completion Time	10.18 (3.43)	2-17	11.20 (3.50)	3-17	9.41 (3.29)	2-15	-1.71
Inhibition/Switching vs. Word Reading: Completion Time	9.73 (3.29)	3-17	10.55 (3.43)	5-17	8.95 (3.18)	3-17	-1.56
Inhibition: Total Errors	7.63 (3.50)	1-14	6.62 (3.57)	1-12	8.52 (3.20)	1-14	1.86
Inhibition/Switching: Total Errors	6.76 (3.56)	1-12	5.90 (4.17)	1-12	7.45 (2.86)	1-12	1.42
D-KEFS Sorting Test (ST)							
Free Sorting Confirmed Correct Sorts	7.82 (2.73)	3-14	6.75 (2.24)	3-9	8.71 (2.85)	3-14	2.27*
Free Sorting Description Score	6.95 (2.71)	2-13	6.25 (2.18)	2-10	7.52 (3.04)	2-13	1.42
Sort Recognition Description Score	5.76 (3.20)	1-14	4.07 (2.30)	1-9	6.95 (3.25)	2-14	2.85**
D-KEFS Tower Test (TT)							

Total Achievement Score	8.97 (2.64)	3-14	8.07 (2.40)	4-13	9.53 (2.76)	3-14	1.55
Total Rule Violations	9.24 (3.84)	3-14	8.36 (3.48)	3-14	10.06 (4.23)	3-14	1.21
Mean First-Move Time	10.33 (2.71)	3-15	10.64 (3.03)	5-15	9.94 (2.56)	3-14	-.70
Time-Per-Move-Ratio	9.67 (3.19)	1-16	8.29 (3.15)	1-13	10.47 (2.98)	1-16	1.98
Move Accuracy Ratio	8.45 (3.81)	1-16	9.50 (3.06)	4-16	8.24 (4.02)	1-15	-.97
Rule-Violations-Per-Item Ratio	8.45 (3.01)	1-11	7.79 (3.33)	1-11	8.88 (2.89)	1-11	.98
WISC-IV/WISC-V/WAIS-IV Subtests							
Digit Span	6.62 (2.77)	1-14	5.67 (2.62)	1-14	7.74 (2.70)	2-13	3.25**
Picture Span	8.90 (3.18)	3-17	6.90 (2.38)	3-11	11.04 (2.63)	6-17	6.23***
Letter-Number Sequencing	6.94 (2.75)	1-12	6.40 (2.67)	3-12	7.05 (2.87)	1-12	.60

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. D-KEFS = Delis-Kaplan Executive Function System; FASD = fetal alcohol spectrum disorder; PAE = prenatal alcohol exposure; WAIS-IV = Wechsler Adult Intelligence Scale, Fourth Edition; WISC-IV = Wechsler Intelligence Scale for Children, Fourth Edition; WISC-V = Wechsler Intelligence Scale for Children, Fifth Edition.

Table 2

Mean T Scores and Range for Caregiver Ratings on the BRIEF2

	Total Sample		PAE with FASD		PAE without FASD		<i>t</i>
	Mean (<i>SD</i>)	Range	Mean (<i>SD</i>)	Range	Mean (<i>SD</i>)	Range	
Inhibit	70.46 (10.46)	38-89	71.51 (10.78)	48-89	69.95 (10.16)	38-89	-.69
Self-Monitor	68.27 (9.01)	39-80	69.04 (8.19)	50-80	67.22 (9.98)	39-79	-.93
Shift	70.71 (12.01)	43-90	70.49 (11.53)	43-88	71.34 (12.94)	43-90	.32
Emotional Control	66.52 (11.44)	40-85	66.89 (11.51)	40-85	66.24 (11.75)	40-82	-.26
Initiate	68.07 (8.79)	43-84	69.51 (8.25)	50-84	66.56 (9.05)	43-79	-1.58
Working Memory	72.26 (9.12)	44-87	73.24 (8.68)	45-87	71.39 (9.44)	44-87	-.95
Plan/Organize	65.58 (8.49)	40-79	65.36 (8.48)	45-79	65.88 (8.81)	40-79	.28
Task-Monitor	62.82 (8.99)	38-82	64.04 (8.19)	45-74	61.68 (9.93)	38-82	-1.21
Organization of Materials	64.15 (8.83)	41-81	64.44 (8.36)	41-78	63.93 (9.23)	46-81	-.27
Behavior Regulation Index (BRI)	71.17 (10.04)	37-89	72.13 (10.45)	44-89	70.49 (9.83)	37-88	-.75
Emotional Regulation Index (ERI)	70.13 (11.81)	42-90	70.24 (11.85)	47-90	70.27 (12.16)	42-89	-.01
Cognitive Regulation Index (CRI)	69.34 (8.58)	42-84	70.31 (7.82)	52-84	68.40 (9.21)	42-81	-1.03
Global Executive Composite (GEC)	72.89 (9.09)	43-87	73.67 (8.29)	54-87	72.20 (10.11)	43-87	-.73

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. BRIEF2 = Behavior Rating Inventory of Executive Function, Second Edition; FASD = fetal alcohol spectrum disorder; PAE = prenatal alcohol exposure.

Table 3

Zero-order Correlations between BRIEF2 Caregiver Ratings and Tests of Executive Function for Total Sample

	Inhibit	Self-Monitor	Shift	Emotional Control	Initiate	Working Memory	Plan/Organize	Task-Monitor	OM	BRI	ERI	CRI	GEC
VFT LF: Total Correct	.09	.01	.10	.05	-.04	-.13	.02	-.06	-.11	.05	.09	-.07	-.02
VFT CF: Total Correct	-.03	-.08	.11	-.22	-.03	-.11	.09	-.04	-.13	-.05	-.06	-.01	-.10
VFT CS: Total Correct Responses	-.22	-.23	-.10	-.32*	-.18	-.09	-.24	-.05	-.09	-.24	-.23	-.13	-.24
VFT CS: Total Switching Accuracy	-.18	-.20	-.04	-.23	-.01	.03	-.03	.08	-.02	-.19	-.14	.03	-.12
VFT LF vs. CF	.11	.10	-.04	.25	.03	.01	-.07	.02	.06	.10	.11	-.03	.08
VFT CS vs. CF	-.15	-.12	-.21	-.08	-.11	.02	-.28*	-.01	.05	-.14	-.15	-.09	-.11
VFT Set-Loss Errors	-.12	.01	.10	.07	.07	.17	-.05	.06	-.06	-.08	.09	.01	.01
VFT Repetition Errors	-.10	-.04	.11	-.04	.11	.13	-.02	-.06	.04	-.09	.03	.03	-.00
VFT Percent Set-Loss Errors	-.11	.02	.12	.03	.07	.19	-.06	.07	-.04	-.06	.09	.03	.01
VFT Percent Repetition Errors	-.09	.01	.10	-.04	.11	.16	-.01	-.00	.04	-.08	.03	.06	.02
VFT CS: Percent Switching Accuracy	-.08	.03	.12	-.01	.15	.31*	.09	.24	.09	-.04	.07	.21	.11
CWIT I: Completion Time	-.05	.08	-.23	-.20	-.12	-.09	-.07	-.13	-.13	.05	-.24	-.11	-.16
CWIT I/S: Completion Time	-.03	-.15	-.21	-.13	-.18	-.11	-.08	-.11	-.08	-.06	-.18	-.10	-.13
CWIT I vs. CN: Completion Time	-.09	.13	-.11	-.04	-.03	.11	.16	.14	.06	.04	-.08	.10	.02

CWIT I/S vs. CN/WR: Completion Time	-.07	-.13	-.04	.01	-.09	.04	.06	.19	-.01	-.08	-.02	.07	.00
CWIT I/S vs. I: Completion Time	.04	-.24	.07	.11	-.04	-.03	-.01	.06	.03	-.10	.10	.01	.05
CWIT I/S vs. CN: Completion Time	-.05	-.08	-.01	.10	-.03	.10	.15	.18	.12	-.04	.05	.13	.09
CWIT I/S vs. WR: Completion Time	-.08	-.17	-.06	-.04	-.10	-.01	-.03	.17	-.12	-.08	-.06	.02	-.06
CWIT I: Total Errors	-.20	-.04	-.10	.11	.04	-.09	.11	-.06	-.12	-.10	.02	-.07	-.02
CWIT I/S: Total Errors	-.27	-.06	-.14	.05	-.03	-.02	.05	.06	-.02	-.17	-.04	-.03	-.02
ST FS: Confirmed Correct Sorts	-.24	-.35*	-.06	-.07	-.07	-.06	.11	.13	-.04	-.27	-.07	.00	-.08
ST FS: Description Score	-.12	-.38*	-.03	-.11	-.09	-.05	.05	.11	-.08	-.21	-.09	-.01	-.08
ST R: Recognition Description Score	-.27	-.41*	-.15	-.12	-.11	-.06	-.05	.20	-.16	-.35*	-.16	-.04	-.17
TT: Total Achievement Score	-.22	-.22	-.20	.05	-.21	-.26	-.28	-.16	-.09	-.17	-.07	-.24	-.21
TT: Total Rule Violations	.31	.05	.17	.44*	.21	.17	.27	.33	.04	.30	.36*	.25	.26
TT: Mean First- Move Time	-.05	-.10	-.19	-.13	-.24	-.18	-.42*	-.14	-.27	-.07	-.17	-.31	-.24
TT: Time-Per- Move-Ratio	-.26	-.10	-.21	-.13	-.35*	-.40*	-.31	-.34	-.18	-.20	-.18	-.37*	-.33
TT: Move Accuracy Ratio	.08	-.03	-.05	-.11	-.03	.04	-.06	.21	-.07	.06	-.09	.02	-.01

TT: Rule-Violations-Per-Item Ratio	.36*	.05	.20	.45**	.34	.32	.31	.37*	.23	.37*	.38*	.39*	.36*
DS	.01	.12	-.05	-.05	.21	.07	.01	.00	.26*	.06	-.05	.10	.07
PS	-.13	-.11	-.13	-.04	.06	.01	-.01	-.03	.01	-.10	-.09	-.00	-.06
LNS	.29	.21	.17	.22	.12	.15	.06	.13	.28	.35	.23	.20	.25

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. BRI = Behavioral Regulation Index; CRI = Cognitive Regulation Index; CWIT I = Color-Word Interference Test – Inhibition; CWIT I vs. CN: Completion Time = Color-Word Interference Test – Inhibition vs. Color Naming: Completion Time; CWIT I/S = Color-Word Interference Test – Inhibition/Switching; CWIT I/S vs. CN: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Color Naming: Completion Time; CWIT I/S vs. CN/WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Combined Naming + Reading: Completion Time; CWIT I/S vs. I: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Inhibition Completion Time; CWIT I/S vs. WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Word Reading: Completion Time; DS = Digit Span; ERI = Emotion Regulation Index; GEC = Global Executive Composite; LNS = Letter-Number Sequencing; OM = Organization of Materials; PS = Picture Span; ST FS = Sorting Test – Free-Sort; ST R = Sorting Test – Recognition; TT = Tower Test; VFT CF = Verbal Fluency Test – Category Fluency; VFT CS = Verbal Fluency Test – Category Switching; VFT LF = Verbal Fluency Test – Letter Fluency.

Table 4

Zero-order Correlations between BRIEF2 Caregiver Ratings and Tests of Executive Function Among Children and Adolescents with Prenatal Alcohol Exposure With FASD

	Inhibit	Self-Monitor	Shift	Emotional Control	Initiate	Working Memory	Plan/Organize	Task-Monitor	OM	BRI	ERI	CRI	GEC
VFT LF: Total Correct	.08	-.14	.08	-.22	-.07	-.29	-.23	.02	.10	-.06	-.10	-.05	-.14
VFT CF: Total Correct	.07	-.15	.37	-.16	.11	-.11	.05	.00	.16	-.06	.08	.12	-.02
VFT CS: Total Correct Responses	-.10	-.35	.05	-.19	-.05	-.07	-.41*	.27	-.08	-.24	-.09	-.10	-.19
VFT CS: Total Switching Accuracy	-.22	-.40*	.09	-.14	.06	.00	-.11	.26	.00	-.30	-.04	.05	-.12
VFT LF vs. CF	.02	.02	-.35	-.05	-.21	-.19	-.31	.00	-.09	.01	-.20	-.21	-.14
VFT CS vs. CF	-.11	-.18	-.32	-.02	-.19	-.01	-.41*	.14	-.28	-.12	-.16	-.27	-.19
VFT Set-Loss Errors	-.19	-.04	.08	.16	.17	.23	-.08	-.09	-.19	-.15	.14	-.01	-.01
VFT Repetition Errors	-.07	.10	.05	-.03	.24	.16	-.03	.08	-.02	-.05	.01	.04	.02
VFT Percent Set-Loss Errors	-.21	-.02	.07	.11	.14	.29	-.09	-.04	-.18	-.16	.11	.03	-.01
VFT Percent Repetition Errors	-.04	.20	.10	.00	.29	.27	.02	.22	.00	-.01	.05	.15	.11
VFT CS: Percent Switching Accuracy	-.21	-.20	.10	.08	.37	.40	.09	.30	.04	-.20	.11	.31	.10
CWIT I: Completion Time	.04	.16	-.12	-.24	-.10	-.10	-.06	-.05	.12	.14	-.23	-.03	-.09
CWIT I/S: Completion Time	-.12	.03	-.23	-.24	-.11	-.24	-.03	-.14	.26	-.03	-.26	-.07	-.14
CWIT I vs. CN: Completion Time	-.11	.08	-.09	.10	-.17	.07	.44	.05	-.01	.03	.00	.13	.11

CWIT I/S vs. CN/WR: Completion Time	-.18	-.01	.04	.22	-.22	-.03	.36	.00	-.11	-.07	.15	.04	.08
CWIT I/S vs. I: Completion Time	-.13	-.20	-.02	.11	.01	-.06	.04	-.07	.05	-.20	.09	-.03	.00
CWIT I/S vs. CN: Completion Time	-.21	-.07	-.09	.22	-.13	.02	.45*	.00	.03	-.12	.10	.11	.11
CWIT I/S vs. WR: Completion Time	-.10	.06	.17	.17	-.22	-.08	.12	-.01	-.22	.01	.18	-.05	.01
CWIT I: Total Errors	-.23	.16	-.24	-.04	.29	.04	.26	-.20	.14	-.02	-.14	.06	.05
CWIT I/S: Total Errors	-.39	.07	-.29	.03	.14	.05	.09	.06	.11	-.18	-.12	.01	.01
ST FS: Confirmed Correct Sorts	-.44	-.43	-.31	-.22	.02	-.11	.23	.23	.02	-.36	-.32	.06	-.11
ST FS: Description Score	-.38	-.43	-.27	-.28	-.04	-.08	.05	.18	-.19	-.36	-.33	-.03	-.17
ST R: Recognition Description Score	-.04	-.53	-.25	-.23	-.31	-.03	-.27	.47	.11	-.24	-.30	.09	-.09
TT: Total Achievement Score	-.15	-.13	-.34	.00	-.16	-.31	-.35	.23	.11	-.05	-.15	-.20	-.15
TT: Total Rule Violations	.07	.09	.15	.68**	.26	.19	.17	.46	.14	.21	.51	.29	.31
TT: Mean First- Move Time	.35	.09	.06	.02	.23	.11	-.26	.12	.10	.26	.05	.08	.14
TT: Time-Per- Move-Ratio	-.26	-.06	-.31	-.33	-.29	-.41	-.44	-.29	-.02	-.19	-.36	-.41	-.33
TT: Move Accuracy Ratio	.34	-.01	.23	.22	.21	.38	.21	.54*	.03	.26	.26	.37	.28

TT: Rule-Violations-Per-Item Ratio	.20	.09	.08	.53	.20	.21	.12	.55*	.23	.31	.38	.30	.31
DS	.20	.27	.00	-.02	.39*	.05	.12	.04	.36*	.23	.00	.25	.16
PS	-.06	.12	.02	.21	.32	.21	.16	.04	-.11	.04	.13	.17	.15
LNS	.72*	.70*	.69*	.63*	.50	.40	.44	-.03	.27	.75*	.72*	.47	.69*

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. BRI = Behavioral Regulation Index; CRI = Cognitive Regulation Index; CWIT I = Color-Word Interference Test – Inhibition; CWIT I vs. CN: Completion Time = Color-Word Interference Test – Inhibition vs. Color Naming: Completion Time; CWIT I/S = Color-Word Interference Test – Inhibition/Switching; CWIT I/S vs. CN: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Color Naming: Completion Time; CWIT I/S vs. CN/WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Combined Naming + Reading: Completion Time; CWIT I/S vs. I: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Inhibition Completion Time; CWIT I/S vs. WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Word Reading: Completion Time; DS = Digit Span; ERI = Emotion Regulation Index; GEC = Global Executive Composite; LNS = Letter-Number Sequencing; OM = Organization of Materials; PS = Picture Span; ST FS = Sorting Test – Free-Sort; ST R = Sorting Test – Recognition; TT = Tower Test; VFT CF = Verbal Fluency Test – Category Fluency; VFT CS = Verbal Fluency Test – Category Switching; VFT LF = Verbal Fluency Test – Letter Fluency.

Table 5

Zero-order Correlations between BRIEF2 Caregiver Ratings and Tests of Executive Function Among Children and Adolescents with Prenatal Alcohol Exposure Without FASD

	Inhibit	Self-Monitor	Shift	Emotional Control	Initiate	Working Memory	Plan/Organize	Task-Monitor	OM	BRI	ERI	CRI	GEC
VFT LF: Total Correct	.29	.24	.11	.22	.11	.08	.24	.04	-.04	.31	.19	.06	.17
VFT CF: Total Correct	.08	.05	-.03	-.34	-.05	-.04	.13	.08	-.16	.09	-.19	.02	-.05
VFT CS: Total Correct Responses	-.20	-.11	-.22	-.54**	-.35	-.11	-.22	-.15	-.03	-.17	-.39	-.16	-.25
VFT CS: Total Switching Accuracy	-.05	-.02	-.16	-.41*	-.06	.07	-.02	.10	.06	-.03	-.29	.06	-.09
VFT LF vs. CF	.13	.13	.09	.46*	.18	.11	.09	.00	.14	.14	.29	.06	.17
VFT CS vs. CF	-.24	-.14	-.15	-.12	-.15	-.03	-.26	-.14	.14	-.23	-.15	-.10	-.14
VFT Set-Loss Errors	-.08	.07	.10	-.06	.01	.10	-.02	.19	.05	-.04	.01	.03	.01
VFT Repetition Errors	-.05	-.17	.19	-.11	.03	.15	-.02	-.14	.27	-.10	.03	.12	.03
VFT Percent Set-Loss Errors	-.01	.07	.16	-.08	.04	.11	-.02	.16	.09	.03	.04	.05	.02
VFT Percent Repetition Errors	-.09	-.14	.09	-.14	-.02	.07	-.08	-.14	.20	-.11	-.04	.05	-.02
VFT CS: Percent Switching Accuracy	.04	.23	.10	-.14	.01	.23	.07	.26	.14	.13	-.02	.15	.12
CWIT I: Completion Time	.05	.08	-.40	-.30	-.06	.03	-.10	-.06	-.14	.10	-.36	-.05	-.15

CWIT I/S: Completion Time	.07	-.25	-.22	-.10	-.19	-.02	-.13	-.06	-.23	-.06	-.17	-.08	-.12
CWIT I vs. CN: Completion Time	-.04	.21	-.10	-.14	.06	.18	-.11	.22	.10	.08	-.12	.08	-.05
CWIT I/S vs. CN/WR: Completion Time	-.06	-.26	-.05	-.06	-.08	.06	-.13	.21	-.08	-.16	-.06	.03	-.09
CWIT I/S vs. I: Completion Time	.05	-.36	.13	.19	-.15	-.12	-.04	.00	-.16	-.14	.16	-.08	-.01
CWIT I/S vs. CN: Completion Time	.01	-.13	.08	.10	-.06	.08	-.09	.19	-.01	-.06	.09	.03	.00
CWIT I/S vs. WR: Completion Time	-.10	-.38	-.17	-.16	-.06	.06	-.11	.25	-.14	-.24	-.18	.06	-.12
CWIT I: Total Errors	-.04	-.18	-.08	.16	.05	-.08	.02	.20	-.07	-.08	.06	.03	.04
CWIT I/S: Total Errors	-.04	-.27	-.06	-.02	-.27	-.17	-.13	.15	-.15	-.15	-.04	-.10	-.10
ST FS: Confirmed Correct Sorts	-.01	-.27	.00	-.05	.01	.07	.09	.30	.12	-.11	-.02	.13	.03
ST FS: Description Score	.09	-.32	.03	-.06	-.05	.03	.05	.22	.07	-.06	-.01	.09	.02
ST R: Recognition Description Score	-.12	-.28	-.15	-.10	.03	.08	.05	.41	-.05	-.19	-.14	.10	-.03

TT: Total Achievement Score	-.33	-.30	-.16	.05	-.39	-.31	-.43	-.31	-.28	-.39	-.05	-.41	-.32
TT: Total Rule Violations	.53*	.06	.16	.26	.27	.26	.33	.36	.08	.45	.24	.31	.30
TT: Mean First-Move Time	-.41	-.25	-.36	-.28	-.59*	-.41	-.50*	-.30	-.49*	-.44	-.35	-.54*	-.50*
TT: Time-Per-Move-Ratio	-.25	-.05	-.18	-.03	-.50*	-.38	-.40	-.30	-.23	-.22	-.10	-.46	-.32
TT: Move Accuracy Ratio	-.26	-.17	-.26	-.32	-.19	-.33	-.21	-.05	-.30	-.27	-.33	-.21	-.31
TT: Rule-Violations-Per-Item Ratio	.61**	.08	.30	.35	.52*	.54*	.47	.38	.35	.53*	.38	.54*	.48*
DS	-.11	.07	-.04	-.02	.24	.21	-.04	.08	.24	-.04	-.04	.13	.09
PS	-.32	-.24	-.28	-.15	.03	-.11	-.26	-.01	-.05	-.31	-.26	-.09	-.19
LNS	.20	-.01	.00	.06	.05	-.01	-.12	.16	.26	.18	.05	.09	.09

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. BRI = Behavioral Regulation Index; CRI = Cognitive Regulation Index; CWIT I = Color-Word Interference Test – Inhibition; CWIT I vs. CN: Completion Time = Color-Word Interference Test – Inhibition vs. Color Naming: Completion Time; CWIT I/S = Color-Word Interference Test – Inhibition/Switching; CWIT I/S vs. CN: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Color Naming: Completion Time; CWIT I/S vs. CN/WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Combined Naming + Reading: Completion Time; CWIT I/S vs. I: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Inhibition Completion Time; CWIT I/S vs. WR: Completion Time = Color-Word Interference Test – Inhibition/Switching vs. Word Reading: Completion Time; DS = Digit Span; ERI = Emotion Regulation Index; GEC = Global Executive Composite; LNS = Letter-Number Sequencing; OM = Organization of Material; PS = Picture Span; ST FS = Sorting Test – Free-Sort; ST R = Sorting Test – Recognition; TT = Tower Test; VFT CF = Verbal Fluency Test – Category Fluency; VFT CS = Verbal Fluency Test – Category Switching; VFT LF = Verbal Fluency Test – Letter Fluency.