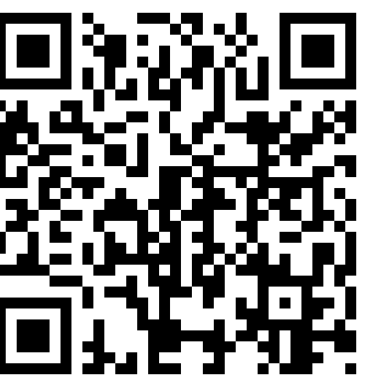


CONSTRUCT VALIDITY EVIDENCE FOR ATENTO, A QUESTIONNAIRE ASSESSING EXECUTIVE FUNCTIONS AND ADHD: CORRELATIONS WITH THE BRIEF-2 AND BRIEF-P



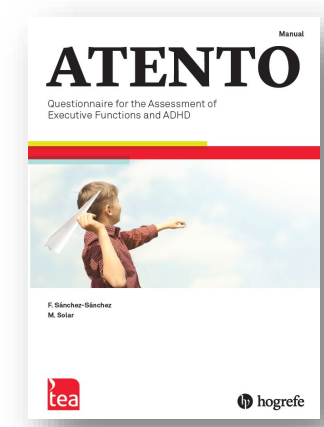
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INTRODUCTION AND AIMS

ATENTO, *Questionnaire for the Assessment of Executive Functions and ADHD* (Sanchez-Sanchez and Solar, 2023), is a new test designed to assess deficits in executive functions and symptoms of attention deficit hyperactivity disorder (ADHD) in children and adolescents aged 3 to 18 years. This multidimensional, multisource (self-report, parents, and teachers) tool provides several general indices and up to 17 specific scales grouped into 5 blocks: 1) control scales, 2) executive function deficits, 3) impact of deficits, 4) DSM-oriented scales, and 5) related problems. The aim of the present work was to find validity evidence for the ATENTO scales and indices' scores, employing widely used and validated tests of Executive Functions, the BRIEF-P (Gioia, Espy et al., 2016) and BRIEF-2 (Gioia, Isquith et al., 2017).

METHOD

Measure: ATENTO



Aim: Comprehensive assessment of Executive Function problems, ADHD symptoms and related problems.

Description: 5 rating scales for Teachers (2), Parent (2) and Self-report (108 to 120 items each).

Age: 3-18yr.

Structure

Profile of affected executive processes

Control scales

- Inc. Inconsistency
- Neg. Negative impression
- Inf. Infrequency

Executive function deficits

- Ate. Attentional control problems
- Beh. Behavioral regulation problems
- Emo. Emotional regulation problems
- Mem. Working memory problems
- Fle. Flexibility problems
- Pla. Planning and organizing problems
- Tem. Time processing deficits

EFI
Executive function deficits index

Impact of potential deficits

- Fam. Impact on the family context
- Sch. Impact on the school context
- Soc. Impact on the social context

GII
Global impact index

Diagnostic aid profile

DSM-oriented scales

- Ina. Inattention symptoms
- Hyp. Hyperactivity and impulsivity symptoms

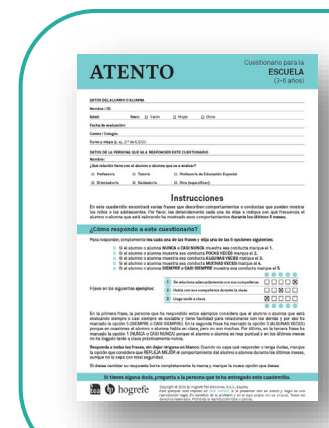
ARI
ADHD risk index

Related problems scales

- Dis. Cognitive disengagement syndrome symptoms
- Bhp. Conduct problems
- Sle. Sleep-related problems

Psychometric studies and samples

Teachers' form (lvl 1; 3-6yr)



- Internal consistency: $n = 709$
- Test-retest reliability: $n = 55$
- BRIEF-P convergence (Teachers' form): $n = 55$

Teachers' form (lvl 2; 6-18yr)



- Internal consistency: $n = 2477$
- Test-retest reliability: $n = 236$
- BRIEF-2 convergence (Teachers' form): $n = 72$

Parents' form (lvl 1; 3-6yr)



- Internal consistency: $n = 733$
- Test-retest reliability: $n = 57$
- BRIEF-P convergence (Parents' form): $n = 65$

Parents' form (lvl 2; 6-18yr)



- Internal consistency: $n = 2613$
- Test-retest reliability: $n = 243$
- BRIEF-2 convergence (Parents' form): $n = 159$

Self-report (8-18yr)



- Internal consistency: $n = 1752$
- Test-retest reliability: $n = 197$

RESULTS

RELIABILITY

Internal consistency for each questionnaire

Score	Self-report	P1	P2	T1	T2
Ate	0.94	0.95	0.97	0.97	0.97
Beh	0.89	0.94	0.93	0.95	0.95
Emo	0.93	0.94	0.94	0.93	0.96
Mem	0.93	0.93	0.97	0.97	0.98
Fle	0.87	0.89	0.92	0.91	0.94
Pla	0.91	0.90	0.95	0.96	0.97
Tem	0.84	0.86	0.93	0.92	0.95
Fam	0.90	0.91	0.93	-	-
Sch	0.90	-	-	0.98	0.96
Soc	0.89	0.87	0.89	0.90	0.94
Ina	0.91	0.91	0.94	0.95	0.96
Hyp	0.90	0.93	0.91	0.94	0.95
Dis	0.86	0.90	0.94	0.94	0.96
Bhp	0.91	0.89	0.93	0.93	0.96
Sle	0.88	0.89	0.89	-	-
EFI	0.98	0.98	0.98	0.98	0.98
GII	0.94	0.91	0.93	0.95	0.95

RELIABILITY

Test-retest correlation for each questionnaire

Score	Self-report	P1	P2	T1	T2
Ate	0.90	0.74	0.86	0.76	0.91
Beh	0.85	0.81	0.85	0.83	0.91
Emo	0.83	0.80	0.81	0.74	0.91
Mem	0.89	0.83	0.85	0.74	0.90
Fle	0.88	0.74	0.82	0.67	0.86
Pla	0.90	0.72	0.88	0.83	0.91
Tem	0.83	0.72	0.77	0.81	0.86
Fam	0.84	0.76	0.86	-	-
Sch	0.94	-	-	0.82	0.92
Soc	0.88	0.63	0.79	0.75	0.89
Ina	0.87	0.73	0.85	0.78	0.91
Hyp	0.85	0.80	0.84	0.83	0.91
Dis	0.89	0.64	0.82	0.72	0.89
Bhp	0.82	0.78	0.84	0.69	0.82
Sle	0.87	0.83	0.79	-	-
EFI	0.89	0.79	0.84	0.75	0.92
GII	0.91	0.70	0.83	0.77	0.91

VALIDITY

Correlations between equivalent scales (BRIEF-P)

	Ate	Beh	Emo	Mem	Fle	Pla	Tem	Fam	Sch	Soc	Ina	Hyp	Dis	Bhp	Sle	EFI	GII
PARENTS' FORM																	
Inh	0,65	0,56	0,59	0,57	0,58	0,54		0,66			0,63	0,57	0,53	0,59		0,75	0,71
Shi			0,66		0,84					0,66						0,62	0,74
EC			0,73		0,63			0,54						0,50		0,66	0,55
WM	0,70			0,70	0,53	0,64		0,54			0,74		0,61			0,72	0,66
PO	0,68			0,63	0,61	0,61					0,72		0,65			0,63	0,55
ISCI	0,63			0,71	0,59	0,66	0,54		0,67		0,63	0,51	0,55	0,61		0,77	0,71
FI				0,75	0,81				0,56		0,58		0,51			0,69	0,73
EMI	0,71			0,70		0,65		0,51			0,76		0,64			0,71	0,63
GEC	0,69			0,67	0,66	0,70	0,62	0,63		0,59	0,71		0,65	0,51		0,78	0,76
TEACHERS' FORM																	
Inh	0,62	0,70	0,74	0,61	0,68	0,69	0,61		0,73	0,60	0,71	0,69	0,55	0,59		0,78	0,76
Shi			0,64	0,54	0,74	0,53	0,66		0,70	0,60	0,63		0,57	0,55		0,65	0,75
CE			0,79		0,72		0,62		0,65	0,58	0,56			0,68		0,65	0,72
WM	0,82			0,84	0,66	0,81	0,77		0,82		0,88	0,51	0,81			0,80	0,71
PO	0,74			0,52	0,80	0,72	0,81	0,81		0,80	0,85		0,81			0,79	0,76
ISCI	0,54	0,63	0,81	0,57	0,74	0,62	0,65		0,72	0,63	0,68	0,61	0,51	0,67		0,76	0,78
FI			0,74	0,51	0,76	0,52	0,67		0,70	0,63	0,62		0,51	0,64		0,68	0,77
EMI	0,81		0,52	0,84	0,70	0,84	0,80		0,82	0,52	0,88	0,51	0,83			0,82	0,75
GEC	0,73	0,58	0,74	0,77	0,81	0,78	0,79		0,82	0,66	0,83	0,58	0,74	0,59		0,85	0,84

VALIDITY

Correlations between equivalent scales (BRIEF-2)

	Ate	Beh	Emo	Mem	Fle	Pla	Tem	Fam	Sch	Soc	Ina	Hyp	Dis	Bhp	Sle	EFI	GII
PARENTS' FORM																	
Inh	0,56	0,86	0,74		0,56			0,66			0,52	0,84		0,74		0,72	0,67
SM	0,53	0,63	0,67		0,60			0,56		0,56	0,62		0,55			0,67	0,70
Shi			0,61		0,80					0,72						0,66	0,66
EC			0,66	0,83		0,63		0,51				0,65		0,73		0,67	0,62
Ini	0,60				0,59	0,52				0,55	0,62		0,70			0,61	0,64
WM	0,76			0,73	0,54	0,64					0,77		0,78			0,72	0,53
PO	0,77		0,51	0,57	0,67	0,76		0,62			0,80		0,68			0,78	0,67
TM	0,53				0,67						0,64					0,52	
OM	0,60				0,77						0,74					0,59	0,50
BRI	0,60	0,85	0,78		0,62			0,68			0,55	0,84		0,73		0,75	0,74
ERI		0,59	0,80		0,78				0,66		0,58	0,58		0,60		0,73	0,70
CRI	0,79			0,64	0,63	0,82		0,62			0,86		0,74			0,79	0,67
GEC	0,78	0,67	0,75	0,54	0,79	0,73		0,71		0,62	0,81	0,66	0,67	0,63		0,89	0,82
TEACHERS' FORM																	
Inh	0,53	0,89	0,56		0,52	0,50					0,53	0,88		0,72		0,65	
SM	0,52	0,68	0,55		0,52	0,50				0,60	0,53	0,67		0,58		0,64	0,59
Shi	0,52	0,56	0,58	0,63	0,79				0,60	0,62	0,54	0,54	0,57			0,71	0,67
EC		0,50	0,82							0,51				0,68			
Ini	0,79			0,74	0,65	0,78	0,52		0,75		0,82		0,80			0,72	0,60
WM	0,82	0,57		0,82	0,68	0,74	0,55		0,81		0,81	0,56	0,76			0,79	0,68
PO	0,74	0,61		0,70	0,72	0,78	0,53		0,76		0,78	0,61	0,68			0,79	0,64
TM	0,73			0,69	0,56	0,82			0,72		0,76	0,63	0,63			0,69	0,52
OM	0,58	0,53			0,69				0,58		0,64	0,52	0,51			0,58	
BRI	0,58	0,87	0,60		0,52	0,53				0,56	0,57	0,86		0,72		0,70	0,54
ERI	0,62	0,81			0,67				0,51	0,66	0,58	0,58		0,63		0,65	0,65
CRI	0,83	0,60		0,77	0,70	0,86	0,55		0,82		0,87	0,60	0,76			0,81	0,65
GEC	0,79	0,78	0,57	0,73	0,76	0,79	0,56		0,78	0,58	0,83	0,76	0,68	0,59		0,88	0,74

CONCLUSIONS

The pattern and magnitude of correlations of the ATENTO executive function problem scores with the BRIEF-P and BRIEF-2 indicate that the scales and indices of both instruments measure the same constructs and in similar ways. These results point toward evidence of ATENTO's construct validity (all equivalent zero-order correlations over $r = .55$ and reaching $.89$ convergence). Studies with larger samples investigating structural validity and reliability are required to ascertain ATENTO's psychometric properties. This instrument can be a very useful tool for early, comprehensive detection of ADHD symptoms and EF problems, which may help practitioners provide targeted treatments.