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Are traits of ADHD associated with self-reported social cognition in an adult community sample?

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Objective and methods

Adults with ADHD are often impaired in their social relationships and may show overlap with ASD symptoms, but studies on social cognition are lacking.

This study explores whether traits of ADHD in a community sample of adults are associated with self-reported social cognition.

Community sample (n = 685, 270 males, 415 females)

Mean age: 33 years (range 16-84 years)

Online survey: Dutch self-report questionnaires on traits of empathy (Empathy Quotient^{1,2}), systemizing (Systemizing Quotient^{1,2}) and ADHD (ADHD Rating Scale (ARS)³; adulthood and retrospective childhood version)

EQ: Cognitive empathy (CE)



EQ: Emotional empathy (EE)



EQ: Social skills (SS)



SQ: Systemizing



SQ - EQ: Brain type (D)



ARS: ADHD symptoms



Categorical approach

Selected participants with DSM-5 screening diagnosis of ADHD on ARS (adulthood: ≥ 5 clinical symptoms & childhood: ≥ 6 clinical symptoms) = "ADHD".

ANOVA ("ADHD"*sex) group comparison with matched controls from the community sample.

	"ADHD" (n=56) M(SD)	Controls (n=56) M(SD)	Main effect "ADHD"	Cohen's d
total EQ	26.7 (9.6)	30.9 (10.5)	p=.013*	-0.42
CE	11.0 (5.6)	12.3 (5.0)	p=.128	-0.26
EE	11.1 (4.7)	13.2 (5.2)	p=.006**	-0.42
SS	5.9 (2.8)	6.9 (2.5)	p=.073	-0.38
SQ	59.5 (20.0)	53.7 (17.4)	p=.066	0.31
D	0.074 (0.121)	0.017 (0.121)	p=.004**	0.47

No significant interactions of "ADHD"*sex were found.

Dimensional approach

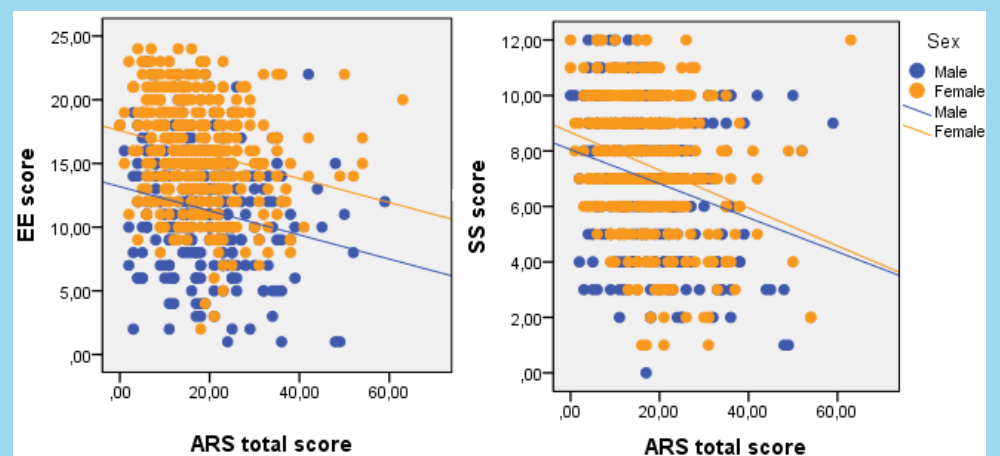
Whole-sample (n = 685) multiple linear regression analysis: CE + EE + SS + SQ + D -> ARS (adulthood total score)?

Significant models:

Across sexes: SS + EE -> ARS ($R^2 = 0.085$; $p < .001$)

Males: SS -> ARS ($R^2 = 0.06$; $p < .001$)

Females: SS + EE -> ARS ($R^2 = 0.091$; $p < .001$)



Conclusions

Both approaches point to reduced emotional empathy in relation to traits of ADHD. Participants with a screening diagnosis of ADHD are characterized by a "male pattern" of self-reported social cognition, regardless of sex.

The social-cognitive profile of ADHD may therefore partly overlap with that of Autism Spectrum Disorder.

Future clinical ADHD studies should focus on possible **impairments** in empathy; sex differences should be taken into account.

References

- ¹Groen, Y., et al. (2015), JADD, 45:2848–2864.
- ²Wheelwright, S., et al. (2006). Brain Research, 1079(1), 47-56.
- ³Kooij, J. J. S., et al. (2005). Psychological Medicine, 35(6), 817-827.