

Can neuropsychological testing facilitate differential diagnosis between at-risk mental state (ARMS) for psychosis and adult attention-deficit hyperactivity disorder (ADHD)?

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Background

Patients with an at-risk mental state (ARMS) for psychosis and patients with attention-deficit hyperactivity disorder (ADHD) have many overlapping symptoms and hence can be difficult to differentiate clinically. Thus, the aim of this study was to investigate whether the differential diagnosis between ARMS and ADHD could be improved by taking neuropsychological performance measures into account.

Methods

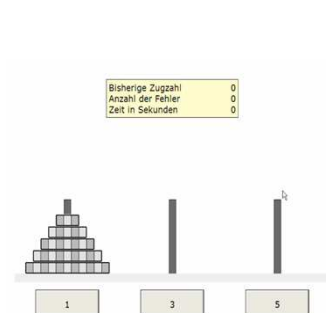
157 ARMS and 122 adult ADHD patients were recruited via the Basel Früherkennung von Psychosen (FePsy) study [1] and the ADHD Special Consultations Unit of the University of Basel Psychiatric Hospital, respectively (see Table 1).

Table 1: Socio-demographic sample characteristics

	ARMS N=157	ADHD N=122	p-value
Age mean (SD)	25.8 (7.33)	31.6 (9.83)	<0.001
Gender (%):			0.273
Women	47 (29.9%)	45 (36.9%)	
Men	110 (70.1%)	77 (63.1%)	
Years of education mean (SD)	11.6 (2.92)		
Risk group (%):			
Prepsychotic only	88 (56.1%)		
Genetic risk only	12 (7.64%)		
Mixed prepsychotic + genetic	26 (16.6%)		
Unspecific only	31 (19.7%)		
Type of ADHD (%):			
Inattentive type		4 (3.28%)	
Combined type		118 (96.7%)	

Note. HC = healthy controls; ARMS = at-risk mental state for psychosis; ADHD = attention deficit hyperactivity disorder

Verbal learning and memory were tested with the California Verbal Learning Test (CVLT), problem solving abilities with the Tower of Hanoi (ToH) task (see Video 1) and sustained attention with the Continuous performance test (CPT) (see Video 2). Group differences in neuropsychological performance were analyzed using generalized linear models, which included age and gender as covariates.



Video 1: Tower of Hanoi (ToH) task



Video 2: Continuous Performance Task (CPT)

Results

Adult ADHD patients recalled significantly fewer words in the CVLT (both after short and long delay) and had significantly more false alarms and longer reaction times in the CPT than ARMS patients.

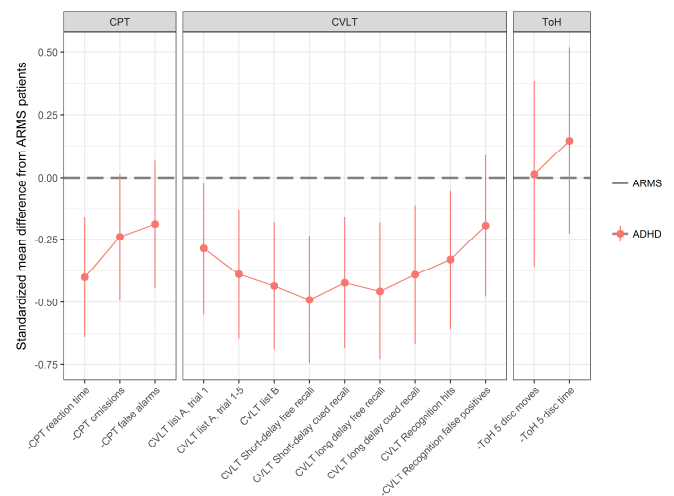


Figure 1. Cognitive performance of adult ADHD compared to ARMS patients. Variables with a minus sign were reversed so that positive scores always represent good performance.

Discussion

Adult ADHD patients show larger deficits than ARMS patients in the domains of verbal memory and sustained attention, but not in problem solving abilities. This is in line with current meta-analyses, which found that impairments in the domains of attention and verbal memory are of medium effect size in adult ADHD patients [2] and of small effect size in ARMS patients [3]. Our results suggest that measures of these domains can be exploited to improve the differential diagnosis between adult ADHD and ARMS patients.

References

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Disclosure Information

All authors declare not to have any conflicts of interest that might be interpreted as influencing the content of the manuscript.