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THE EFFECTS OF CLASSROOM INTERVENTIONS ON THE BEHAVIOR OF SCHOOL-AGED CHILDREN WITH ADHD SYMPTOMS: A META-ANALYSIS

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OBJECTIVE

Children with attention-deficit/hyperactivity disorder (ADHD) often exhibit problem behavior in class, whereas teachers often seem to lack the knowledge and skills to manage this behavior. The aim of the study was to determine the effectiveness of several types of classroom interventions that teachers can apply in order to decrease off-task and disruptive behavior of school-aged children with ADHD symptoms. Furthermore, potential moderators were examined.

METHOD

- Literature search in PsycINFO, ERIC, and Web of Science + reference lists of review studies and included studies
- Inclusion criteria
 - Study: Published in academic journal, English
 - Participants: ADHD symptoms, age 6 - 17 years
 - Intervention: Implementable by teacher
 - Outcome: On-task, off-task, disruptive behavior
- Separate meta-analyses for within-subjects (WSD) and single-subject design studies (SSD) using standardized mean differences
- Subgroup analyses for intervention type (antecedent-based, consequence-based, self-regulation, and combined) and other potential moderators (setting, age, gender, medication)

TYPES OF INTERVENTIONS

Antecedent-based

Manipulation environment, instruction, or task

Consequence-based

Reinforcement and punishment procedures

Self-regulation

Teaching self-control and problem-solving skills

RESULTS

	Effect size (standardized mean difference)	
	WSD (k = 23)	SSD ¹ (k = 68)
Overall	0.82**	2.90
Intervention type	Consequence-based > other**	
Antecedent-based	0.32** (k = 10)	2.63 (k = 15)
Consequence-based	1.71** (k = 7)	2.88 (k = 20)
Self-regulation	0.42 (k = 3)	3.18 (k = 24)
Combined	0.57* (k = 3)	2.56 (k = 9)
Setting	General education > other**	
General education	1.23** (k = 10)	3.19 (k = 33)
Other	0.48** (k = 13)	2.34 (k = 29)
Age	ns	
Children	0.89** (k = 21)	2.88 (k = 52)
Adolescents	0.26 (k = 2)	2.97 (k = 16)
Gender	ns	
0 – 19 % male	-	3.24 (k = 4)
20 – 80 % male	0.88** (k = 8)	3.14 (k = 8)
81 – 100 % male	0.82** (k = 14)	2.84 (k = 56)
Medication	ns	
0 – 19 % medicated	1.11** (k = 12)	2.86 (k = 18)
20 – 80 % medicated	0.19 (k = 2)	2.34 (k = 12)
81 – 100 % medicated	0.45 (k = 2)	3.09 (k = 22)

¹No significance tests were performed for SSD studies
 ns = not significant, * = p < 0.05, ** = p < 0.01

CONCLUSION

- Classroom interventions are effective in reducing off-task and disruptive behavior of children with ADHD symptoms
- Consequence-based interventions are most helpful, but SSD studies suggest also high effectiveness of self-regulation interventions
- Interventions in general education classrooms are more effective than those in other settings
 → More severe ADHD problems or already existing behavior programs in other settings?
- Age and medication do not influence effectiveness of classroom interventions
- No insight in impact of gender due to lack of studies that included females