The Effects of Attention-Deficit/Hyperactivity Disorder (ADHD) Teacher Training Programs for Teachers and Pupils: A Systematic Review and Meta-Analysis.

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INTRODUCTION

This study investigates the effects of specific ADHD teacher training interventions designed to address the problem of mainstream teachers feeling ill-equipped to teach children with ADHD in mainstream classrooms (1).

Teachers' knowledge of ADHD significantly correlates with teachers' confidence in their ability to effectively teach children with ADHD, create an inclusive classroom and manage behaviour (2).

Effects of teacher and classroom strategies on the ADHD-type behaviours of pupils in the classrooms are also measured in relatively few studies. This is, perhaps, surprising given the literature suggests that the rationale for teacher training in ADHD, in addition to improving self-efficacy and self-confidence for teachers, is to improve the social and educational outcomes of the child with ADHD (3).

However, a systematic understanding of the effects of reported ADHD teacher training programmes is compromised by the fact that comparison across studies is difficult due to a variety of outcome measures and methodologies being used (4).

OBJECTIVE

To synthesize the evidence on the efficacy of ADHD teacher training interventions for teachers' ADHD knowledge and reducing pupils' ADHD-type behaviors.

Primary question: How effective are ADHD teacher training interventions in increasing teachers' knowledge and positive behaviours towards children with ADHD-type behaviours?

Secondary question: Does an ADHD teacher training intervention result in reduced ADHD-type behaviours of pupils in the classrooms of participating teachers?

METHOD

A systematic search was performed on 8/11/19 and repeated on 14/4/20 in six electronic databases: PsycINFO, CINAHL Plus, ERIC, MEDLINE, Web of Science and Scopus, plus backward and forward citation chasing.

Peer-reviewed and grey literature were included.

No date or language restrictions were used.

A meta-analysis (m-a) to calculate pooled standard mean was conducted in Comprehensive Meta-Analysis.

Primary outcome for m-a: teacher ADHD knowledge

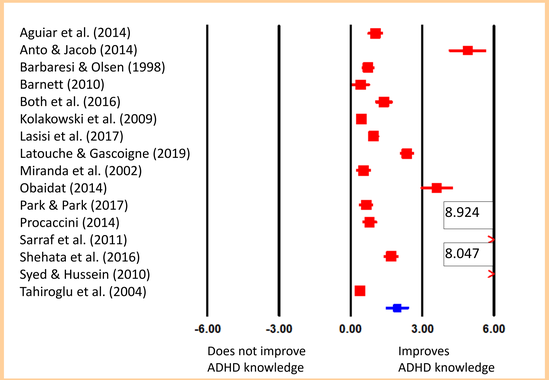
Secondary outcome for m-a: pupil ADHD-type behavior change

RESULTS

29 studies retained for systematic review and 22 had sufficient data for meta-analysis

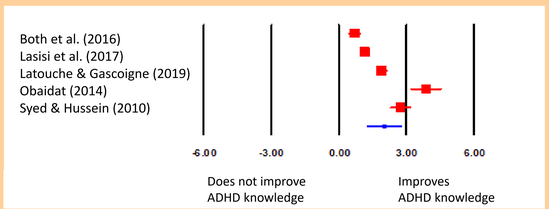
Primary Outcome: Teacher ADHD Knowledge

Figure 1 Teacher ADHD knowledge pre-post measures (within subjects)



Overall SMD= 1.96, 95% CI= 1.48, 2.43
Heterogeneity: χ^2=602.62, df=15, p=0.000, I^2=98%

Figure 2 Teacher ADHD knowledge post-follow up measures (within subjects)

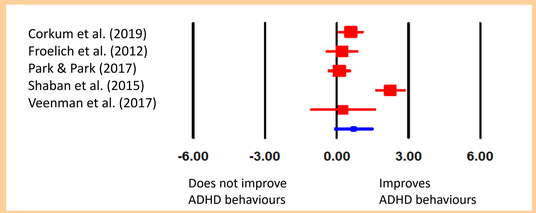


Overall SMD= -1.21, 95% CI= -2.02, -0.41
Heterogeneity: χ2=204.60, df=4, p=0.000, I2=98%

Teacher ADHD knowledge between subjects data only available for pre-post test: SMD=1.56 (95% CI: 0.52, 2.59).

Secondary Outcome: Pupil ADHD-Type Behaviour

Figure 3 Pupil ADHD-Type Behaviour pre-post measures (between subjects)



Overall SMD= 0.71, 95% CI= -0.11, 1.52
Heterogeneity: χ2=32.11, df=4, p=0.000, I2=88%

Figure 4 Pupil ADHD-Type Behaviour post-follow up measures (between subjects)

Overall SMD= 0.50, 95% CI=0.14, 0.87
Heterogeneity: χ2=0.89, df=1, p=0.345, I2=0%

Pupil ADHD-behaviour within subjects pre-post test: SMD=0.78 (95% CI: 0.37, 1.18), post-follow up: SMD= 0.50 (95% CI: 0.14, 0.87)

Figure 5 Risk of Bias data for RCTs (ROB2)

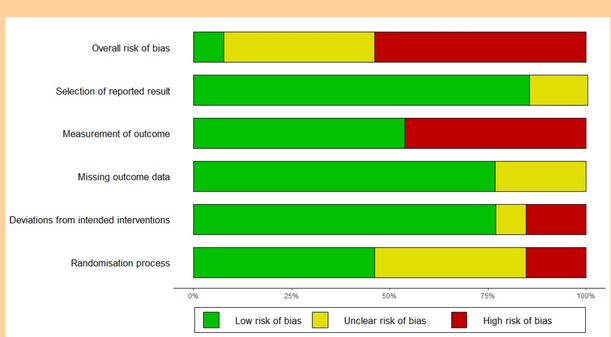
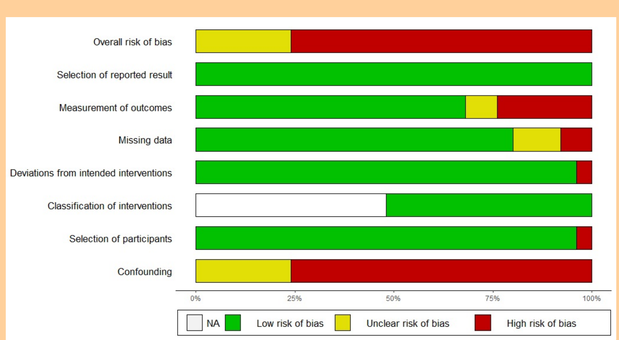


Figure 6 Risk of Bias data for Non-Randomised Studies (ROBINS-I)



CONCLUSIONS

This systematic review with meta-analysis provides some support that ADHD teacher training interventions improve teachers' ADHD knowledge and positive behaviors towards pupils with ADHD-type behaviors, even though the medium-to-high risk of bias indicates that we can not be confident in the size of the effect.

Furthermore, according to our systematic review and meta-analysis, there is no solid evidence to support improvements in pupil ADHD-type behaviors following these programmes.

The broad range of geographical locations for the included studies shows a consistency in results for different cultures and educational systems, but the high risk of bias across all included studies, together with the vast heterogeneity of interventions and measures, creates uncertainty in terms of confidence in the reported results.

Limitations centre on high heterogeneity and high risk of bias, predominately due to lack of control of confounding factors and non-blinded, subjective outcome measures.

The strongest evidence relates to the improvement in teacher ADHD knowledge, where all studies used an objective outcome measure and results were consistent regardless of intervention content or delivery.

In terms of future research, there is a strong need for high quality RCTs which investigate the specific interventions and their characteristics which produce positive outcomes for both teachers and pupils.

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