

# An Individual Participant Data Meta-analysis: Behavioral Treatments for Children and Adolescents With Attention-Deficit/Hyperactivity Disorder

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## Abstract

**Objective:** Behavioral interventions are well established treatments for children with attention-deficit/hyperactivity disorder (ADHD). However, insight into moderators of treatment outcome is limited.

**Method:** We conducted an individual participant data meta-analysis [IPDMA], including data of randomized controlled behavioral intervention trials for individuals with ADHD < 18 years. Outcomes were symptoms of ADHD, oppositional defiant disorder (ODD), and conduct disorder (CD) and impairment. Moderators investigated were symptoms and impairment severity, medication use, age, IQ, sex, socioeconomic status, and single parenthood.

**Results:** For raters most proximal to treatment, small to medium sized effects of behavioral interventions were found for symptoms of ADHD, inattention, hyperactivity/impulsivity (HI), ODD and CD, and impairment. Blinded outcomes were only available for small preschool subsamples and limited measures. CD symptoms and/or diagnosis moderated outcome on ADHD, HI, ODD, and CD symptoms. Single parenthood moderated ODD outcome, ADHD severity moderated impairment outcome. Higher baseline CD or ADHD symptoms, a CD diagnosis, and single parenthood were related to worsening of symptoms in the untreated, but not in the treated group, indicating a protective rather than an ameliorative effect of behavioral interventions for these children.

**Conclusion:** Behavioral treatments are effective for reducing ADHD symptoms, behavioral problems, and impairment as reported by raters most proximal to treatment. Those with severe CD or ADHD symptoms, a CD diagnosis, or single parents, should be prioritized for treatment, as they may evidence worsening of symptoms in the

absence of intervention.

Keywords: ADHD; behavioral interventions; child and adolescents; individual participant data meta-analyses; moderator analyses.