Effectiveness of a Telehealth Service Delivery Model for Treating Attention-Deficit/Hyperactivity Disorder: A Community-Based Randomized Controlled Trial

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Objective
To test the effectiveness of a telehealth service delivery model for the treatment of children with attention-deficit/hyperactivity disorder (ADHD) that provided pharmacological treatment and caregiver behavior training.

Method
The Children’s ADHD Telemental Health Treatment Study (CATTS) was a randomized controlled trial with 223 children referred by 88 primary care providers (PCPs) in 7 communities. Children randomized to the experimental telehealth service model received 6 sessions over 22 weeks of combined pharmacotherapy, delivered by child psychiatrists through videoconferencing, and caregiver behavior training, provided in person by community therapists who were supervised remotely. Children randomized to the control service delivery model received treatment with their PCPs augmented with a telepsychiatry consultation. Outcomes were diagnostic criteria for ADHD and oppositional defiant disorder (ODD) and role performance on the Vanderbilt ADHD Rating Scale (VADRS) completed by caregivers (VADRS-Caregivers) and teachers (VADRS-Teachers) and impairment on the Columbia Impairment Scale-Parent Version (CIS-P). Measures were completed at 5 assessments over 25 weeks.

Results
Children in both service models improved. Children assigned to the telehealth service model improved significantly more than children in the augmented primary care arm for VADRS-Caregiver criteria for inattention ($\chi^2[4]=19.47$, p<.001), hyperactivity ($\chi^2[4]=11.91$, p=0.02), combined ADHD ($\chi^2[4]=14.90$, p=0.005), ODD ($\chi^2[4]=10.05$, p=0.04), and VADRS-Caregiver role performance ($\chi^2[4]=12.40$, p=0.01) and CIS-P impairment ($\chi^2[4]=20.52$, p<.001). For the VADRS-Teacher diagnostic criteria, children in the telehealth service model had significantly more improvement in hyperactivity ($\chi^2[4]=11.28$, p=0.02) and combined ADHD ($\chi^2[4]=9.72$, p=0.045).

Conclusion
The CATTS trial demonstrated the effectiveness of a telehealth service model to treat ADHD in communities with limited access to specialty mental health services.

Clinical trial registration information—Children’s Attention Deficit Disorder With Hyperactivity (ADHD) Telemental Health Treatment Study; http://clinicaltrials.gov; NCT00830700.