Innovations in Practice: A pilot randomized controlled trial comparing computer-assisted cognitive rehabilitation, stimulant medication, and an active control in the treatment of ADHD.


Background
This research aimed to compare computer-assisted cognitive rehabilitation (CACR) psychostimulants (MED) and placebo CACR (PCACR) in the treatment of ADHD using a multiarm parallel design.

Methods
Thirty-four boys with ADHD, aged 7–12, were randomly assigned to either CACR (n = 12), MED (n = 11), or PCACR (n = 11). However, the study was not blinded and medication doses might be suboptimal given the lack of titration. Continuous performance test, Tower-of-London, forward/backward digit span, span board, Raven's progressive matrices, and SNAP-IV were completed at baseline, posttest, and follow-up.

Results
Computer-assisted cognitive rehabilitation outperformed both MED and PCACR on backward digit span at posttest and PCACR at follow-up. CACR outperformed PCACR and MED on forward digit span at posttest and PCACR at follow-up. CACR outperformed MED on span board at posttest. CACR outperformed PCACR and MED on Raven's matrices at posttest. CACR and PCACR scored lower than MED on ADHD-PHI at posttest. CACR scored lower than MED on ADHD-C at posttest.

Conclusions
Immediately after interventions, CACR improved certain simple executive functions (EFs) as much as active stimulant medication. On complex EFs, CACR was superior to active stimulant medication and PCACR. CACR reduced behavioral symptoms of ADHD more than active stimulant medication. However, at 3-month follow-up, maintenance of the CACR gains was weak.