Computerized cognitive training in children and adolescents with attention-deficit/hyperactivity disorder as add-on treatment to stimulants: feasibility study and protocol description

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Trends Psychiatry Psychother. vol.39 no.2 Porto Alegre Apr./June 2017
DOI: http://dx.doi.org/10.1590/2237-6089-2016-0039

ABSTRACT

Background
Cognitive training has received increasing attention as a non-pharmacological approach for the treatment of attention-deficit/hyperactivity disorder (ADHD) in children and adolescents. Few studies have assessed cognitive training as an add-on treatment to medication in randomized placebo-controlled trials. The purpose of this preliminary study was to explore the feasibility of implementing a computerized cognitive training program for ADHD in our environment, describe its main characteristics and potential efficacy in a small pilot study.

Methods
Six ADHD patients aged 10-12-years old receiving stimulants and presenting residual symptoms were enrolled in a randomized clinical trial to either a standard cognitive training program or a controlled placebo condition for 12 weeks. The primary outcome was core ADHD symptoms measured using the Swanson, Nolan and Pelham Questionnaire (SNAP-IV scale).

Results
We faced higher resistance than expected to patient enrollment due to logistic issues to attend face-to-face sessions in the hospital and to fill the requirement of medication status and absence of some comorbidities. Both groups showed decrease in parent-reported ADHD symptoms without statistical difference between them. In addition, improvements on neuropsychological tests were observed in both groups – mainly on trained tasks.

Conclusions
This protocol revealed the need for new strategies to better assess the effectiveness of cognitive training such as the need to implement the intervention in a school environment to have an assessment with more external validity. Given the small sample size of this pilot study, definitive conclusions on the effects of cognitive training as an add-on treatment to stimulants would be premature.