Cognitive Working Memory Training (CWMT) in adolescents suffering from Attention-Deficit/Hyperactivity Disorder (ADHD): A controlled trial taking into account concomitant medication effects

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Abstract

Although, cognitive working memory training (CWMT) has been reported to enhance working memory functioning in youths with attention-deficit/ hyperactivity disorder (ADHD), few studies take into account the concomitant effects of medication. Sixty adolescents aged from 11 to 15 years were randomly assigned to CWMT treatment, whereas medication was either continued or not introduced (no randomization performed). Results revealed beneficial effects of CWMT on the different components of working memory (WM), namely the phonological loop, the visuospatial sketchpad and the central executive. In particular, CWMT allowed participants to obtain a level of performance similar to the typically-developing adolescents for the phonological loop (i.e., forward digit span) as well as for the visuospatial sketchpad (i.e., board span). For the central executive (i.e., backward digit span) the concomitant effects of CWMT and medication allows participants to obtain the performance level of the typically-developing adolescents. Although, no transfers were observed with respect to other cognitive functions, in medicated patients with ADHD, CWMT reduced hyperactivity / impulsivity symptoms at 2-month follow-up. The present study gives evidence of the efficacy of CWMT to enhance WM performance, as well as, to reduce symptoms. The overall results highlight the usefulness of multimodal interventions.