

ZMATH 2016f.00761

Re, Anna M.; Lovero, Francesca; Cornoldi, Cesare; Passolunghi, Maria Chiara

Difficulties of children with ADHD symptoms in solving mathematical problems when information must be updated.

Res. Dev. Disabil. 59, 186-193 (2016).

Summary: It has been hypothesized that ADHD is associated both with difficulties in mathematical problem solving and in updating information in working memory. However, the relationship between updating and performance on mathematical word problems has never been studied for children with ADHD. The present study examined these issues comparing the performance of solving mathematical word problems (with no updating request vs high updating request) in a group of 11–12 year old children with ADHD compared to a matched control group with typical development (TD). Results showed that children with ADHD solved fewer problems correctly than typically-developing children; moreover they made more errors in solving problems with updating requirements than those without updating requirements. In contrast, typically-developing children did not show any differences in problems performance on problems with and without updating requirements. Fine grained analyses of children’s problem solving processes showed that children with ADHD found more difficult to select the appropriate data prior to calculation and to choose and execute the correct solution than typically-developing children. The difficulty to select the appropriate data results more severe in problems with updating requirements. Overall, these results support the hypothesis that the learning difficulties of children with ADHD are related to their executive dysfunctions, that negatively affect complex tasks requiring updating of to-be-processed information.

Classification: D73 C43 D53

Keywords: working memory updating; cognitive ability; ADHD; word problems; problem solving

doi:10.1016/j.ridd.2016.09.001