Executive functioning and its relation to ASD and ADHD symptomatology in 22q11.2 deletion syndrome.


Abstract

Children with 22q11.2 deletion syndrome (22q11DS; velo-cardio-facial-syndrome) are at risk for the developmental disorders, attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). In this study, the relation between executive functioning (EF) and the severity of ADHD and ASD symptoms is examined, since EF is known to be important in relation to emotional and behavioral problems. The participants consist of 58 children (38 females) with a mean age of 13.5 years (SD 2.6). Standardized assessment was used to evaluate the severity of ASD and ADHD symptomatology. The major aspects of EF, i.e., cognitive flexibility, inhibition, sustained attention, distractibility, working memory and reaction speed, were evaluated. The profile of EF in 22q11DS was found to be characterized by weaker performance compared to the norms on all subdomains of EF. Poor cognitive flexibility and inhibition, as well as high distractibility, were found to be related to more severe ASD symptoms, while poor quality of sustained attention and high distractibility were found to be related to more severe ADHD symptoms. It is concluded that children with 22q11DS experience impairments in EF, and that the degree of impairment on specific EF subdomains is related to the severity of ASD and/or ADHD symptomatology. These results may help in defining the mediating role of neurocognitive dysfunctions in the development of social and behavioral problems in 22q11DS.