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The Stress Axis activity in children with Autism, Attention Deficit/Hyperactivity and Specific Learning Disorder, with the use of biomarkers of Stress

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Introduction: Studies in individuals with neurodevelopmental disorders show dysfunction of the Hypothalamic -Pituitary-Adrenal axis (HPA). There is evidence that children with autism spectrum disorder (ASD), Attention Deficit/Hyperactivity Disorder (ADHD) and children with Specific Learning Disorders (SLD), have a moderate or a significant deviation of the regular stress system function

Purpose: The aim of the research was to assess diurnal rhythms and stress responses of both HPA axis and the sympathetic nervous system (SNS), in children with High Functioning Autism/Asperger Syndrome, ADHD and SLD compared to typically developing controls (TD).

Methods: Totally 157 of school aged children participated in the study: All participants provided with saliva samples at three specific time points during a day, as well as before and 5 minutes after an academic and a moral cognition task. Salivary cortisol and alpha amylase (sAA) were selected as reliable indicators of HPA axis and SNS activity, respectively. Perceived stress in children was measured with the self-reported questionnaire "Stress in Children" (SiC).

Findings: ADHD children had statistically significant differences at evening and diurnal sAA levels, whereas ASD children showed lower diurnal sAA secretion adjusted for sex, age, and general IQ. Moreover, an increase in sAA levels was found in ASD and ADHD children, after the academic performance testing. Statistically significant differences were observed in the overall perceived stress and in the subscale "Lack of Social Support" between the ASD and the TD group.

Biography

Sophia Anesiadou has a PhD in developmental & behavioral pediatrics. She is a special education teacher and a researcher at Medical School of the National and Kapodistrian University of Athens in Greece. She has a teaching, clinical and researching duties at the University, in First Department of Pediatrics, Unit of Developmental and Behavioral Pediatrics, as an expert in Neurodevelopmental Disorders. Her field of interests is Autism, Attention Deficit/Hyperactivity Disorder (ADHD) and Learning Disorders in childhood and adolescence and the science of Stress. She has post graduated and PhD studies in these fields. Now her research interests are focused on "Cerebral lateralization of writing in students at risk for dyslexia using functional Transcranial Doppler ultrasonographyempathy"

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