

Stress and obesity in European adolescents

by

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Aim: To investigate whether the experience of chronic stress is involved in the etiology of obesity development in European adolescents by exploring the interaction between their chronic stress experience and the adolescents' body composition, dietary aspects, physical activity patterns and level of fitness.

Methods: In the framework of the cross-sectional part of the HELENA project, additional stress assessments were performed in six European centers (Ghent, Stockholm, Pecs, Vienna, Athens and Zaragoza). Next to the HELENA measurements, the adolescents completed the Adolescent Stress Questionnaire (ASQ), comprising 10 stress component scales. In a subsample of 50 adolescents/centre, baseline wake-up salivary free (BWSF) cortisol was measured in order to perform a criterion validity of the ASQ.

Results: A total of 1319 adolescents completed the ASQ and of these, 283 adolescents provided saliva samples. Results from validity analyses show an adequate reliability and construct validity of the ASQ to assess chronic stress in European adolescents; however, the criterion validity (comparison with BWSF cortisol) was rather poor. Compared to boys, adolescent girls reported having more stress when assessed with the ASQ. This was the case for most stress scales and in its totality. Preliminary analyses show positive associations between levels of stress experience, assessed with the ASQ, and body composition measurements, in particular BMI, certain skinfold thicknesses and circumferences, TBW and FFM. Further analyses will be performed to investigate the relationship between chronic stress and other obesity-related parameters (dietary behavior, food preferences, physical activity and physical fitness).

Conclusions: Preliminary evidence suggests that chronic stress might be associated with certain aspects of obesity development in adolescents. This stress research within the HELENA study will reveal new insights into the effect of chronic stress on the obesity etiology across European adolescents. It will also create the opportunity to formulate new hypotheses for future research.

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