

STRESS, SPIRIT AND SHAPE: UNPACKING ADOLESCENT HEALTH IN ZAGREB HIGH SCHOOLS

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Background: Adolescence is a critical period when stress may affect nutritional status and body composition. Spirituality, defined as meaningful connections with oneself, others, nature, and something beyond the self that promote purpose, joy, and inner peace, may support coping with stress and healthier lifestyles. However, its relationship with stress and nutritional status remains unclear.

Objective: To examine the associations of perceived stress and spiritual health with anthropometric indicators (BMI and body fat percentage) among adolescents, while assessing the influence of sex, age, and socioeconomic status on these relationships.

Subjects and methods: This cross-sectional study included 500 adolescents from Zagreb, Croatia. Perceived stress, spiritual health, and nutritional status/body composition were assessed using the PSS-10, Spiritual Health Scale, anthropometry, and bioelectrical impedance analysis.

Results: Adolescents reported moderate perceived stress levels (mean=17.16, SD=6.08). BMI categories were: underweight (7.3%), normal weight (78.6%), overweight (11.7%), and obesity (2.4%); median body fat percentage was 19.72%. Girls showed higher stress than boys (19.66 ± 5.63 vs. 14.58 ± 5.44 , $p < 0.001$). Spiritual health was moderate (median=23.00) and not significantly correlated with stress ($r = -0.044$, $p = 0.388$), with weak associations emerging after adjustment for sex and age, but not for socioeconomic status. Stress was not associated with BMI ($r = -0.032$, $p = 0.475$), neither after adjustment for covariates, but was positively associated with body fat percentage ($r = 0.326$, $p < 0.001$), independent of age and socioeconomic status but not sex. Spiritual health was negatively associated with BMI ($r = -0.208$, $p < 0.001$) and body fat percentage ($r = -0.129$, $p = 0.004$). These associations remained significant in adjusted analyses.

Conclusions: Stress, spiritual health, and nutritional status appear to be mildly interconnected components of adolescent health. Promoting psychosocial well-being may support healthier nutritional outcomes, highlighting the need for further longitudinal and intervention research.

Keywords: Adolescents; Perceived stress; Spirituality; Nutritional status; BiCePs_Nutrition.

Acknowledgement / Funding Source: This research is part of the Institute for Anthropological Research project IA-INT-2024BiCePs_Nutrition (funded by The European Union's National Recovery and Resilience Plan (NPOO) for Croatia.