Joint Association of Screen Time and Physical Activity with Cardiometabolic Risk Factors in aNational Sample of Iranian Adolescents: The CASPIANIII Study

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Abstract

Metabolic syndrome (MetS) and its contributing factors are considered important health problems in the pediatric age group. This study was designed to assess the joint association of ST and PA with cardiometabolic risk factorsamong Iranian adolescents. A representative sample of 5625 (50.2% boys) school students with a mean age of14.73 (SD: 2.41) were selected through multistage random cluster sampling method from urban and rural areas of 27 provinces in Iran. ST and PA were assessed by self-administered validated questionnaires. Anthropometric measures (height, weight and waist circumference (WC)) and MetS components (abdominal obesity, elevated blood pressure (BP), low high-density lipoprotein cholesterol (HDL-C), elevated triglycerides (TG) and high fasting blood sugar (FBG)) were measured according to standardized protocols. MetS was defined according to the Adult Treatment Panel III criteria modified for the pediatric age group. Moreover, elevated total cholesterol (TC), elevated low-density lipoprotein cholesterol (LDL-C), and generalized obesity were considered as other cardiometabolic riskfactors. Students with high ST levels had significantly higher body mass index z-score (BMI z-score), WC, TG, LDL-C, and BP as well as lower HDL-C level; whereas those with high PA levels had significantly higher HDL-C levels as well as lower BMI z-score, TC, and BP. Adolescents with low PA/high ST levels had significantly higher BMI, WC, LDL-C levels, as well as higher SBP and DBP compared to their other counterparts. In Multivariate model, jointeffect of low PA/high ST (compared to the high PA/low ST group) increased the odds of overweight, abdominal obesity and low HDL-C and decreased the odds of elevated TC. The findings of this study showed that jointassociation of high ST and low PA have direct association with abdominal obesity, overweight and low HDL-C and indirect association with elevated TC.