Associations between different components of fitness and fatness with academic performance in Chilean youths

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Objectives. To analyze the associations between different components of fitness and fatness with academic performance, adjusting the analysis by sex, age, socio-economic status, region and school type in a Chilean sample. Methods. Data of fitness, fatness and academic performance was obtained from the Chilean System for the Assessment of Educational Quality test for eighth grade in 2011 and includes a sample of 18,746 subjects (49% females). Partial correlations adjusted by confounders were done to explore association between fitness and fatness components, and between the academic scores. Three unadjusted and adjusted linear regression models were done in order to analyze the associations of variables. Results. Fatness has a negative association with academic performance when Body Mass Index (BMI) and Waist to Height Ratio (WHR) are assessed independently. When BMI and WHR are assessed jointly and adjusted by cofounders, WHR is more associated with academic performance than BMI, and only the association of WHR is positive. For fitness components, strength was the variable most associated with the academic performance. Cardiorespiratory capacity was not associated with academic performance if fatness and other fitness components are included in the model. Conclusions. Fitness and fatness are associated with academic performance. WHR and strength are more related with academic performance than BMI and cardiorespiratory capacity. © 2016 Olivares and García-Rubio.

Academic achievement

Adolescents

BMI

Physical fitness

academic achievement

body mass

female

fitness

human

juvenile

linear regression analysis

major clinical study

male

model

waist to height ratio