

Maternal Education and Academic Achievement in Schoolchildren: The Role of Cardiorespiratory Fitness

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Abstract

Objectives: To examine the relationship between maternal education, cardiorespiratory fitness, and academic achievement in schoolchildren, specifically whether the association between maternal education and academic achievement is mediated by cardiorespiratory fitness. **Study design:** This is a secondary analysis of a cross-sectional study including 478 Spanish schoolchildren aged 8-11 years. ANOVA was used to test differences in cardiorespiratory fitness by maternal education level. ANCOVA was used to test the differences in academic achievement by the educational level of mothers and the cardiorespiratory fitness of children, controlling for each other. A mediation analysis was used to test if the relationship between maternal education and academic achievement was explained by cardiorespiratory fitness. **Results:** A higher level of maternal education was associated with a higher cardiorespiratory fitness level and academic achievement in children; moreover, the cardiorespiratory fitness level in children was associated with better academic achievement ($P < .05$). Finally, cardiorespiratory fitness acted as a partial mediator of the relationship between maternal education and academic achievement in boys ($z = 1.81$; $P = .03$) but not in girls ($z = 0.86$; $P = .19$), explaining 6.54% of this relationship for the total sample and 6.67% for boys. **Conclusions:** This study suggests that the benefits of maternal education on academic achievement are partially explained by the mediating role of cardiorespiratory fitness.

Author keywords

academic performance
academic success
children
educational level
fitness
physical activity