SKINFOLD AND FITNESS DETERMINANTS OF 9 YEAR OLD ICELANDIC SCHOOL CHILDREN
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Abstract
INTRODUCTION: Main objectives of this study were to assess skinfold thickness and physical fitness (watts/kg) of 9 year old school children (born 1994) in Iceland and assess their determinants with emphasis on parental social factors.
METHODS: Four-hundred-eighty-eight subjects (73.3% participation rate) from 18 randomly selected primary-schools participated in this cross sectional study. Height, weight, sum of four skinfolds (suprailiac, subscapular, bicep and tricep skinfolds – SKF) and other anthropometric measures were performed on all participants. Maximal cycle ergometer test was performed on 229 participants and of those, 177 wore Actigraph accelerometers to measure physical activity over 3-5 consecutive days. Questionnaires regarding family background and lifestyle were collected from 361 mothers and 330 fathers. Multiple linear regression was used to analyze the data and assess determinants of both physical fitness and SKF with stepwise forward selection.
RESULTS: SKF (mm) was found to be the strongest predictor of physical fitness (beta = -0.02, part.R² = 0.44) and living in a town or a rural area was associated with better fitness (beta = 0.53, part.R² = 0.05 and beta = 0.60, part.R² = 0.10, respectively) compared to those who lived in a city. Male gender was associated with better fitness level (beta = 0.32, part.R² = 0.06) compared to female gender. Social factors had very little effect on fitness but having a father with high salary compared to low was associated with lower fitness (beta = -0.16, part.R² = 0.01) and likewise having a father who smoked (beta = -0.05, part.R² = 0.01). Physical activity (total kcounts/day) and BMI of one’s mother were found to be the strongest predictor of SKF (beta = -0.04, part.R² = 0.08 and beta = 1.6, part.R² = 0.08, respectively). Children who had a smoking mother were more likely to have higher SKF (beta = 3.4, part.R² = 0.028) and children whose fathers had college/university education compared to only middle school education were more likely to have lower SKF (beta = -10.6, part.R² = 0.028). Female gender was associated with higher SKF (beta = -9.5, part.R² = 0.02).
CONCLUSION: These results suggest that social status of parents of 9 year old Icelandic school children does not seem to have much weight in determining either physical fitness or SKF of these children.

Keywords: Children, Anthropometric Data, Physical Fitness