

Effectiveness of a school-based physical activity intervention on adiposity, fitness and blood pressure: MOVI-KIDS study

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Objective To test a physical activity intervention (MOVI-KIDS) on obesity indicators, physical fitness and blood pressure (BP) in children. **Methods** A crossover randomised cluster trial was conducted, which comprised 1434 children (4-7 years old) from 21 schools in the provinces of Cuenca and Ciudad Real in the Castilla-La Mancha region of Spain. The intervention consisted of three 60 min sessions/week on weekdays between October 2013 and May 2014. Changes in anthropometric variables, physical fitness and BP parameters were measured. The analyses used were mixed regression models to adjust for baseline covariates under cluster randomisation. **Results** There was no significant improvement in overweight/obesity with the intervention compared with the control group in both sexes. Further, the intervention did not alter other adiposity indicators or BP parameters. Improvements in cardiorespiratory fitness were seen in girls (1.19; 95% CI 0.31 to 2.08; $p=0.008$), but not in boys. Finally, there was an improvement in velocity/agility in both girls (-2.51 s; 95% CI -3.98 to -1.05; $p=0.001$) and boys (-2.35 s; 95% CI -3.71 to -0.98; $p=0.001$), and in muscular strength in both girls (0.66; 95% CI 0.03 to 1.28; $p=0.038$) and boys (1.26; 95% CI 0.03 to 1.28; $p<0.001$). **Conclusion** MOVI-KIDS was not successful in reducing the adiposity and maintained BP levels at previous healthy values in children. The intervention, however, showed significant

improvements in cardiorespiratory fitness in girls, and muscular strength and velocity/agility in boys and girls. Trial registration number NCT01971840; Post-results. © Author(s) (or their employer(s)) 2020. No commercial re-use. See rights and permissions. Published by BMJ.

children

intervention effectiveness

physical fitness

school

blood pressure

cardiorespiratory fitness

child

childhood obesity

clinical trial

controlled study

crossover procedure

female

human

male

motor performance

multicenter study

muscle strength

obesity

physical education

physiology

preschool child

procedures

randomized controlled trial

school

sex factor

socioeconomics

Spain

Adiposity

Blood Pressure

Cardiorespiratory Fitness

Child

Child, Preschool

Cross-Over Studies

Female

Humans

Male

Motor Skills

Muscle Strength

Overweight

Pediatric Obesity

Physical Education and Training

Schools

Sex Factors

Socioeconomic Factors

Spain