

Initial validation of the scale of perceived exertion (EPInfant) in Chilean children [Validación inicial de la escala de medición de esfuerzo percibido infantil (EPInfant) en niños chilenos]

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Introduction: Perceived exertion scales quantify the sensation caused by metabolic changes during exercise. Children need tailored tools due to their cognitive immaturity such as the EPInfant scale recently developed in Chile. Objective: To determine the validity and reliability of the EPInfant scale in children during a graded exercise test. Materials and methods: We conducted a cross-sectional study for which we selected healthy children younger than 18 years and grouped them according to Piaget's stages of cognitive maturity: Concrete operations (8-12 years) and formal intelligence (13-15 years). The Chester step test was used and heart rate, workload and perceived exertion were recorded during the test. Pearson r and intraclass correlation coefficients were used to assess validity and reliability, respectively. Results: 75 children were admitted, 35 (18 male) from the concrete operations group and 40 (20 male) from the formal intelligence group. In the four groups, heart rate and perceived exertion increased significantly with exercise intensity ($p < 0.0001$). Perceived exertion was correlated with heart rate in both the concrete operation and the formal intelligence groups and in males and females ($r = 0.73$, $r = 0.58$, $r = 0.43$, $r = 0.62$, respectively; $p < 0.0001$). Regression models were significant in all groups ($p < 0.0001$). In the concrete operations group the intraclass correlation coefficient was 0.88 (0.82-0.92) in men and 0.94 (0.91-0.96) in women. Conclusion: EPInfant scale was a reliable and valid instrument to measure perceived exertion during exercise in children with different levels of cognitive maturity, and it was reliable in the concrete operations group of children.

Adolescent

Child

Cognition

Exercise tolerance

Physical exertion

Reproducibility of results

Validation studies as topic

Validity of tests

adolescent

child

Chile

cross-sectional study

exercise

exercise test

exercise tolerance

female

heart rate

human

intelligence

male

reproducibility

self report

validation study

Adolescent

Child

Chile

Cross-Sectional Studies

Exercise Test

Exercise Tolerance

Female

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Humans

Intelligence

Male

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Self Report