Changes in body coordination in children from Azores islands. A 3 years longitudinal study.

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Poster: 11th ACSM annual congress, Lausanne, Switzerland, 05-08 July, 2006

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Abstract

Purpose: The purpose of this study was: (1) to analyse longitudinally the changes in body coordination (BC) in children during 3 years (6 to a 9 years old); and to analyse the stability of BC.

Methods: Sample size comprises 142 girls (6.37±0.31 years old at the first evaluation and 8.42±0.35 at the third), and 143 boys (6.44±0.29 years old at the first evaluation and 8.34±0.39 at the third). BC was evaluated according to the body coordination test battery (*KörperkoordinationsTest für Kinder*) developed by Kiphard and Schilling (1974). The battery comprises four tests: backward balance (BB), jumping sideways (JS), hopping on one leg (HL), and shifting platforms (SP), from the 4 tests it is obtain a motor quotient (MQ) that permit the classification of children BC. A mixed ANOVA was used to analyze the changes along the 3 years and the differences between boys and girls. Intra-class correlation coefficient was used to analyze the stability in the all items test battery.

Results: In both boys and girls and in all items of test battery there were significant increases during the 3 years. In MQ the results show a linear increase in girls and no significant changes in boys. The BC level was higher in boys than in girls at all 3 evaluations, although in both boys and girls the level was low. It was found moderate (0.50) to strong (0.80) stability in both boys and girls.

Conclusions: In summary: (1) boys had a higher BC level than girls; (2) there was a linear increase in MQ in girls; (3) BC shows moderate to strong stability.

Purpose

The purposes of this study were:

- to analyse longitudinally the changes in body coordination (BC) in children during 3 years (6 to a 9 years old);
- to analyse the stability of BC.

Sample

Sample size comprises 142 girls (6.37±0.31 years old at the first evaluation and 8.42±0.35 at the third), and 143 boys (6.44±0.29 years old at the first evaluation and 8.34±0.39 at the third)

Body Coordination Assessment

BC was evaluated according to the body coordination test battery (*KörperkoordinationsTest für Kinder)* (Schilling, 1974).

The battery comprises four tests: backward balance (BB), jumping sideways (JS), hopping on one leg (HL), and shifting platforms (SP), from the 4 tests it is obtain a motor quotient (MQ) that permit the classification of children BC.


BB


JS


HL

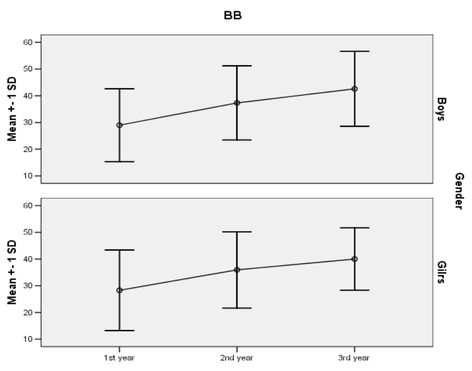

SP

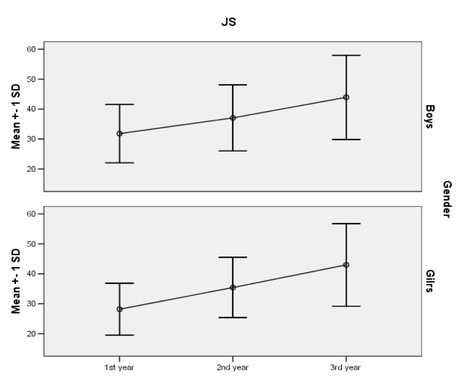
Children were assessed once a year during 3 years

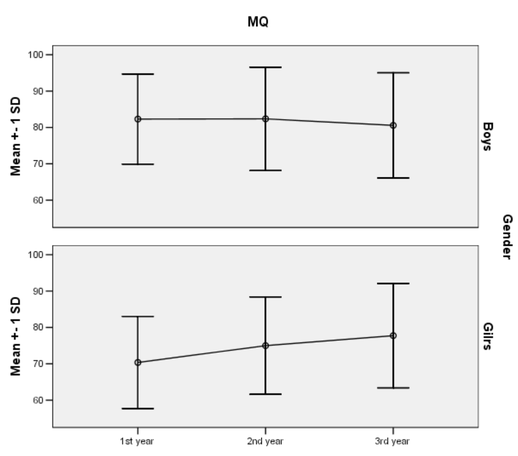
Statistical analysis

A mixed ANOVA was used to analyze the changes along the 3 years and the differences between boys and girls. Intra-class correlation coefficient was used to analyze the stability in the all items test battery.

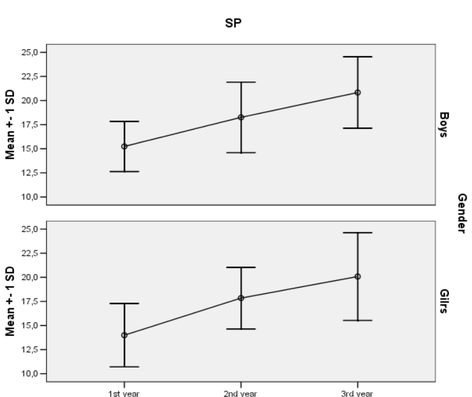
Results

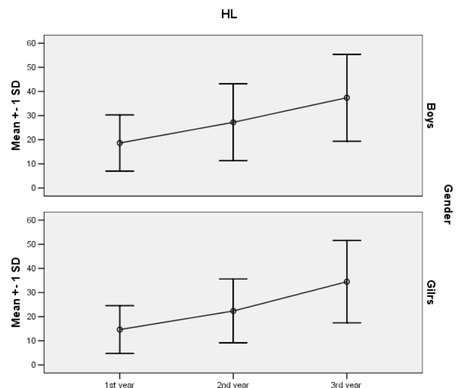






		Coordination levels				
		Disturbance	Inadequate	Normal	Good	Very good
Gilrs	1st year	58.5%	30.3%	11.3%	0.0%	0.0%
	2nd year	36.6%	43.0%	19.7%	0.7%	0.0%
	3rd year	32.6%	35.5%	31.9%	0.0%	0.0%
Boys	1st year	14.7%	52.4%	32.2%	0.7%	0.0%
	2nd year	21.7%	39.2%	38.5%	0.7%	0.0%
	3rd year	26.1%	35.8%	38.1%	0.0%	0.0%





Intra-class correlation (R) and 95% confidence interval (CI) to estimate stability

	Boys		Girls	
	R	CI(95%)	R	CI(95%)
BB	0.77	0.69 – 0.83	0.76	0.68 – 0.82
JS	0.85	0.79 – 0.89	0.75	0.66 – 0.81
SP	0.50	0.34 – 0.63	0.49	0.32 – 0.62
HL	0.87	0.83 – 0.90	0.85	0.80 – 0.89

Conclusion

In both boys and girls and in all items of test

battery there were significant increases during the 3 years. In MQ the results show a linear increase in girls and no significant changes in boys. The BC level was higher in boys than in girls at all 3 evaluations, although in both boys and girls the level was low. It was found moderate (0.50) to strong (0.80) stability in both boys and girls.

In summary:

boys had a higher BC level than girls;

there was a linear increase in MQ in girls;

BC shows moderate to strong stability.

Schilling, F. (1974). Korper-koordinations-test fur kinder ktk. Manual. Weiheim: Beltz Test, BmGH.