

Physical activity, physical fitness and motor competence according weight status.

A study in Cape Verdean school children

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Purpose

This study aimed to analyse the differences in levels of physical activity (PA), physical fitness (PF) and motor competence (MC) according to the weight status, in schoolchildren from the Island of Santiago, Cape Verde.

Study design

This cross-sectional study was carried out in 2017.

Participants

145 boys and 198 girls, with 13.5 ± 0.8 years of age.

Assessments

Anthropometry

Height and weight were used to determine the values of body mass index (BMI, kg / m^2), and weight status was classified according to IOTF cut values for BMI (Cole, Bellizzi et al. 2000; Cole, Flegal et al. 2007).

Physical activity (PA)

PA was measured with pedometry (New Lifestyles; NL-800). Participants wear a pedometer (hip) during 7 consecutive days. The day average of the number of steps was calculated.

Physical Fitness (PF)

PF was evaluated through four fitnessgram battery tests: one mile run/walk (1MRW), 90° push-up (PU), curl-up test (CU), and back-saver seat-and-reach (b-s SR); and with a grip strength test.

Motor competence

Motor competence was evaluated with KTK and TGMD-2

Body coordination test for Children (Körperkoordinations test für Kinder) – KTK



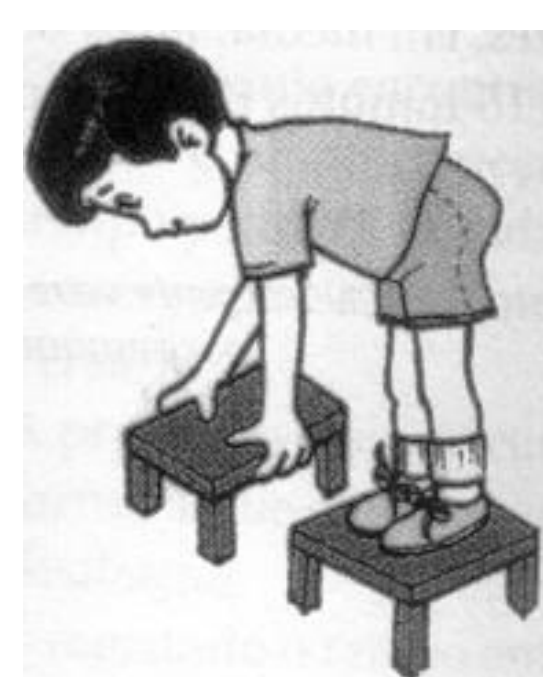
Walking backwards on balance beams



Hopping for height on one foot



Jumping sideways



Moving sideways

Test of gross motor development 2^o Ed (TGMD2)

Object Control skills

Catch, striking a stationary ball, stationary dribble, overhand throw, underhand roll and kick

Locomotor skills

Hop, run, gallop, slide, horizontal jump and leap

Data analysis

The t-test was used to analyze the differences between genders. The Kruskal–Wallis test was used to analyze the differences between weight status categories in the level of PA, PF and MC, according to gender and age group. The Bonferroni posterior test was used.

Results

Table 1: Prevalence of thinness, normal weight and overweight

	Boys	Girls	
Thin	51 (35.7%)	62 (31.3%)	In both sexes there are a higher prevalence of thinness than overweight
Normal weight	80 (55.9%)	117 (59.1%)	
Overweight/Obese	12 (8.4%)	19 (9.6%)	

Table 2: Number of steps per day (mean and standard deviation)

	Boys	Girls	
Thin	11863(2191)	10289(2667)	* Independent of weight status
Normal weight	11370(2807)	10090(3422)	* boys were significant more active than girls
Overweight/Obese	11820(876)	10186(1645)	*

* Significant differences between boys and girls

There were no significant differences in PA between weight status.

Table 3: Physical fitness (mean and standard deviation)

		Boys	Girls	
Thin	90° PU (#)	11.9(5.8)	8.2(5.1)	*
	grip strength (kg)	21.4(6.2)	18.9(5.1)	*
	b-s SR (cm)	27.5(6.9)	29.4(7.0)	*
	1MRW (min)	8.5(1.5)	9.8(1.4)	*
	CU (#)	44.6(23.5)	24.4(15.7)	*
Normal weight	90° PU (#)	12.8(5.5)	6.9(4.7)	*
	grip strength (kg)	23.0(6.0)	20.7(6.9)	*
	b-s SR (cm)	27.3(6.8)	31.4(7.2)	*
	1MRW (min)	8.7(1.3)	10.3(1.6)	*
	CU (#)	50.2(21.3)	17.8(4.5)	*
Overweight/Obese	90° PU (#)	10.2(3.8)	4.5(2.1)	*
	grip strength (kg)	26.2(7.4)	21.1(5.3)	*
	b-s SR (cm)	29.7(6.1)	31.9(7.6)	*
	1MRW (min)	9.6(2.0)	10.9(1.7)	*
	CU (#)	46.3(18.7)	28.5(22.5)	*

* Significant differences between boys and girls

In girls there were significant differences between weight status in 90° PU ($\chi^2=14$; $p = 0.001$) - overweight girls had significant less performance than normal weight ($p=0.016$) and than thin girls ($p=0.001$); in grip strength ($\chi^2=6.89$; $p = 0.032$) – thin girls had less grip strength than normal weight ($p=0.035$); and in 1MRW ($\chi^2=7.1$; $p=0.035$) - thin girls had less performance than overweight ($p=0.029$). In boys there were no significant differences between weight status

Table 4: Motor competence (mean and standard deviation)

		Boys	Girls	
Thin	MQ-KTK	97.9(11.1)	80.6(15.4)	*
	Object control skills	42.4(6.3)	40.7(5.8)	
	Locomotor skills	42.9(7.0)	41.7(6.9)	
Normal weight	MQ-KTK	92.8(16.7)	82.4(15.0)	*
	Object control skills	41.5(5.2)	40.7(5.1)	
	Locomotor skills	42.9(5.4)	41.8(7.1)	
Overweight/Obese	MQ-KTK	93.8(6.5)	73.0(18.2)	*
	Object control skills	37.9(6.9)	42.1(4.0)	
	Locomotor skills	40.1(6.8)	43.1(4.5)	

* Significant differences between boys and girls

Conclusion

The participants were mostly normal weight, with emphasis on the prevalence of low weight in relation to overweight/obesity. With significant differences between weight categories in PF and no differences in MC tests.