

Cartas al director

The association of dance participation with body fat and physical fitness among youth girls



Asociación entre la participación en la danza y la composición corporal y la condición física en chicas jóvenes

To the editor:

Physical activity levels decline¹ from childhood to adulthood and this decline is sharper in girls than boys². Dancing is a well-liked and predominant type of physical activity among girls³. Therefore, dance participation may be important to build health among youth girls. We aimed to examine the association of dance participation with body fat and physical fitness in youth girls.

Participants were recruited from the UP & DOWN study⁴. Data collection was undertaken from September 2011 to June 2012. Children and adolescents were recruited from schools in Cadiz and Madrid, respectively. A total of 2225 youth (1077 girls) participated in the UP & DOWN study. The present study included 705 youth girls aged 11.79 ± 2.48 years. Body

fat and physical fitness were assessed by the ALPHA health-related fitness test battery for youths⁵. Body mass index and waist circumference were determined by standardized methods. Body fat percentage was calculated from triceps and subscapular skinfold thicknesses using Slaughter's equations⁴. Muscular fitness was assessed based on maximum handgrip strength and the standing long jump test. A single muscular strength Z-score was computed from the two muscular tests. Motor fitness was assessed with the 4 x 10-m shuttle run test of speed of movement, agility, and coordination. Cardiorespiratory fitness was assessed by the 20-m shuttle run test. Physical activity and participation in dance were assessed with the Physical Activity Questionnaire for Adolescents/Children (PAQ-A/C).

Table I shows that girls who participated in dance had significantly lower levels in the three body fat indicators than those who did not participate in dance. After adjustment for other physical activities (model 2), these associations remained significant, with the exception of body fat percentage. Dance participation, however, was not related with any physical fitness component.

An intervention study in 8 girl dancers (+ 8 controls) found that both physical fitness (i.e. cardiorespiratory and muscular fitness) and body composition indicators improved four months after dance team participation⁶. The dancers also had higher cardiorespiratory fitness than did controls. Another study with 12 girl dancers

Table I
Differences in body fat and physical fitness according to dance participation in youth girls

	Yes Mean \pm SD	No Mean \pm SD	Yes vs. No Mean difference (95% CI)	<i>P</i> _{Model 1}	<i>P</i> _{Model 2}
<i>n</i>	357	348			
Body fat					
Body mass index (kg/m ²)	19.88 \pm 3.47	20.68 \pm 3.43	-0.80 (-1.31, -0.29)	0.020	0.039
Waist circumference (cm)	63.48 \pm 7.59	65.77 \pm 7.71	-2.29 (-3.42, -1.15)	0.001	0.013
Body fat (%)	24.38 \pm 7.49	25.65 \pm 7.69	-1.27 (-2.39, -0.15)	0.039	0.067
Physical fitness					
Muscular fitness (z-score)*	0.29 \pm 0.71	0.42 \pm 0.80	-0.13, (-0.24, -0.02)	0.971	0.398
Motor fitness (sec x -1)	-13.24 \pm 1.14	-13.15 \pm 1.14	-0.10, (-0.26, -0.07)	0.627	0.421
Cardiorespiratory fitness (stage)	3.44 \pm 1.50	3.58 \pm 1.83	-0.13, (-0.38, -0.11)	0.669	0.627

Statically significant values are in bold. Model 1: analyses were adjusted by age (years) and maternal education (university level/below university level). Model 2: adjustments for model 1 plus other physical activities (PAQ-A/C score without dance participation). *z-score computed from handgrip strength and standing broad jump test.

who had been participating in dance programs on average of 10-15 hours weekly during 6-7 years established that dancers had better cardiorespiratory fitness and total body fat than sedentary students⁷. However, our findings indicate that dance participation may reduce levels of body fat but not influence physical fitness among girls. Although our design does not allow us to draw any conclusions on the causal direction of the associations, these findings support that dance programs may be specifically important for obesity prevention in girls during youth.

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