

LEVELS OF PHYSICAL ACTIVITY AND FITNESS IN NORMAL-WEIGHT AND OVERWEIGHT CHILDREN

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Italy**ABSTRACT**

The levels of daily physical activity are reduced during preadolescence and this predisposes young people to overweight and obesity [1,2]. The levels of physical fitness of young people are in relation to BMI [3]. The aim of the study was to examine the physical activity levels and motor performances in relation to BMI. The Physical Activity Questionnaire for Children (PAQ_C) [4] and tests on standing long jump and 20-m sprint[5,6], have been completed by a sample of 161 boys and 141 girls, aged 11 to 12 years, divided into two groups, normal weight and overweight / obese, according to the cut off of Cole [7]. Apart from the descriptive statistics (M±DS), Student's T Test was carried out, in order to highlight the significant differences within the group. The significance index was set to $p < .05$. ANOVA 2 (group) highlighted considerable differences in the following tests: the males and females of the group Nw showed superior motor performances compared to the group Ow-Ob in standing long jump ($p < .001$) and in speed test (M: $p < .001$; F: $p < .05$). In self-report PAQ_C the group Nw males and females showed higher scores than the group Ow-Ob ($p < .05$). Physical education at school increases the levels of physical activity, motor development and prevents obesity in young. The teaching styles are of significant importance.

Key words: physical activity levels; physical fitness; physical education; obesity; school.

INTRODUCTION

The levels of daily physical activity are reduced during preadolescence and this predisposes young people to overweight and obesity 1,2.

The percentage of young Italians who practice physical activity for an hour a day, seven days a week, is about half compared to the international. In particular, the percentages for males are: 11 years 10% vs 28%, to 13 years 9% vs 24% at 15 years 10% vs 19%; and for females: 11 years 6% vs 19%, to 13 years 5% vs 13% and 15% vs 10 years 5%1.

Physical inactivity of children and young people is a cause of various diseases 3: the most obvious effects of sedentary lifestyles are the overweight and obesity, steadily increasing in European countries4.

The levels of physical fitness, strength, endurance, speed, motor coordination, of young people are in relation to BMI. There is an interdependent relationship between low levels of physical activity, structured and unstructured, the decline of motor performance and the increase in overweight 5.

The aim of the study was to examine the physical activity levels and motor performances in relation to BMI.

METHODS

The Physical Activity Questionnaire for Children (PAQ_C) 6 and tests on standing long jump and 20-m sprint7,8, have been completed by a sample of 161 boys and 141 girls, aged 11 to 12 years (tab.1), divided into two groups, normal weight and overweight / obese, according to the cut off of Cole 9.

RESULTS

Apart from the descriptive statistics (M±DS), Student's T Test was carried out, in order to highlight the significant differences within the group (tab.2). The significance index was set to $p < .05$. ANOVA 2 (group) highlighted considerable differences in the following tests: the males and females of the group Nw showed superior motor performances compared to the group Ow-Ob in standing long jump ($p < .001$) and in speed test (M: $p < .001$; F: $p < .05$).

In self-report PAQ_C the group Nw males and females showed higher scores than the group Ow-Ob ($p < .05$).

Table 1

Sample				
Sex	Group	N	Age	BMI
M	NW	103	12.10±1,03	18,41±1,72
F	NW	87	11,82±0,815	18,45±1,86
M	Ow-Ob	58	11,74±0,947	23,89±1,81
F	Ow-Ob	54	12.12±1,872	22,20±3,13
Total		302		

Table 2

Measures							
Group	Sex	SLJ	P value	20m speed	P value	PAL	P value
NW	M	1,37±0,72	0,011	4,26±2,23	0,008	2,64±0,52	0,006
OW-OB	M	1,20±0,63		4,66±2,26		2,38±0,50	
NW	F	1,22±0,62	0,000	4,26±2,15	0,000	2,26±0,51	0,008
OW-OB	F	1±0,52		4,81±2,50		2,03±0,46	

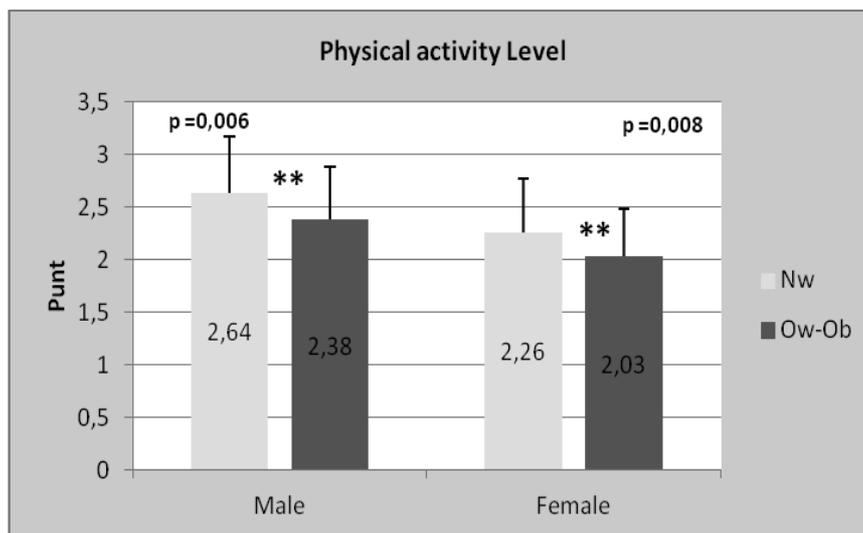


Figure 1

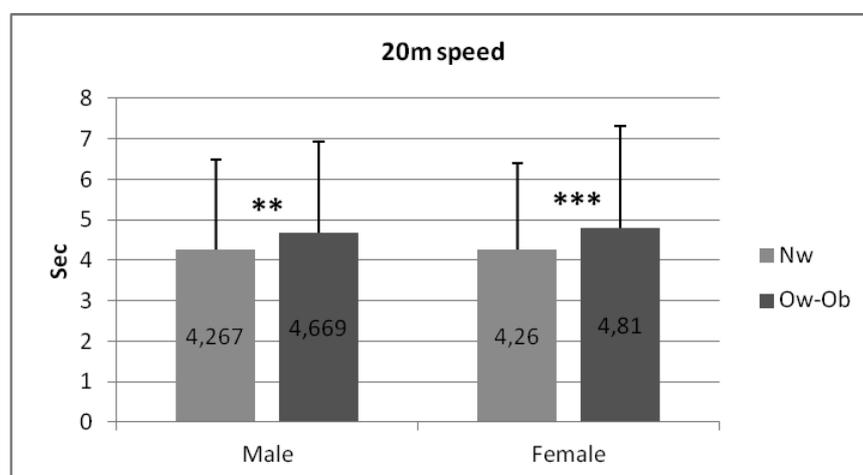


Figure 2

DISCUSSION

The study confirms the relationship between levels of physical activity and motor performance of young people.

The relationship between physical activity levels and risk of overweight and obesity in children and adolescents is multifactorial and interdisciplinary: families, schools and communities have a key role in the implementation of programs for the prevention and promotion of physical activity daily¹⁰. Motor performance and the evolution of psycho-affective factors are interrelated with overweight and obesity among children and young people¹¹.

Physical activity in young people is declining and there has been a worrying level of inactivity during physical education at school, consequently, the fitness levels are declining¹².

Emerge the following problem: the levels of motor performance may affect the practice of physical activities at school and in their free time?

The learning of motor skills is related to the level of motor abilities of the student and the practice of enjoyable activities at school has a mediating function for intrinsic motivation, perception of self-efficacy and the development of physically active lifestyles in free time¹³.

According to Ortega et al¹⁴ the physical fitness is an important marker of health for children and young people, because: (a) the efficiency levels of cardiorespiratory fitness are associated mainly abdominal adiposity; (b) the efficiency cardiorespiratory and muscle are associated with the occurrence of cardiovascular disease risk; (c) the improvement of the strength and speed has positive effects on skeletal development; (d) the improvement of cardiorespiratory fitness has effects on the psycho-affective (depression, anxiety, the perceived of competence).

Various studies have shown that children and young people are overweight and obese show motor performance below the normal weight: in particular in motor performance that require vertical and horizontal displacement of the body and in the tasks of motor coordination^{15,16}.

Low levels of physical activity determine, in a circular relationship, overweight and low motor performance, which also predispose the body to disease in later life¹⁷.

CONCLUSIONS

You need to identify the relationship between overweight and obesity in young people, physical activity and factors intrapersonal and interpersonal, to implement programs to promote adolescent health. Parents, family and society have a significant role in the development of physically active behaviors of young people¹⁸.

Physical education in school offers all students an environment favorable to increase levels of physical activity, promote learning and motor development, changing the organization and the choice of motor tasks¹⁹. Physical education at school increases the levels of physical activity, motor development and prevents obesity in young. The teaching styles are of significant importance²⁰.

In physical education the prevention of overweight requires: competence of the teacher; definition of objectives adapted and realistic; choice of various physical activities and acceptables, the role of parents to motivate their children to physical activity is important,

elimination of all obstacles to the practice of activities physical; students aware of the benefits of motor practice; physical activity practiced systematically²¹.

Physical activity is a determinant in the educational process of children and adolescents: there are reciprocal relationships between levels of physical activity, the development of motor skills, perception of competence and the condition of overweight and obesity²².

The school organization, curricular and extracurricular, develops an educational and prevention action through the amount, type and quality of physical activities.

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