

Epidemiological study on child obesity in the school population of the city of Marsala (Italy)

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SUMMARY

In the following work there are data regarding an epidemiological study carried out in 2012–2013 on the scholastic population of Marsala (Trapani province, Italy) - namely first, fifth and seventh graders. The purpose of this work is to comprehend the predominance of overweight and obese children and their diets within the range of 2114 subjects, 1041 females and 1073 males. The analysed targets were 1873, 911 females and 962 males. Overall, the overweight+obese children amounted to 42.96% in which there is a slight male majority.

KEY WORDS

Child obesity; overweight; Epidemiology; school population.

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INTRODUCTION

In Europe, child obesity affects about 5 millions school-age children, increasing by 250,000 per year. In 2007 the WHO, World Health Organization (DE ONIS ET AL., 2007; WHO, 2007) published growth curves from 5 to 19 years, reevaluating with a different statistic approach the anthropometric data

collected in the years before 1970, observing an increase of overweight and obese children (WHO, EUR. CHILDHOOD OBESITY, 2007; SPINELLI ET AL., 2009).

The different background on the structure of the growth curves and standards suggested several cut-off points for overweight and obese diagnoses: from 0 to 5 years and from 5 to 19 years.

From 5 to 19 years, the statistic-clinical principles have been confirmed by COLE (2000) and by the International Obesity Task Force (IOTF, 2004).

By using the WHO growth curves, the value of BMI 25 in the 19-year-olds coincide with 85 percentile (± 1 SD, Standard Deviation) and it is being overweight.

Likewise, the value of BMI 30 in the 19-year-olds coincide with 97 percentile (± 2 SD) and it is obesity.

For the younger age group, from 0 to 5 years, the diagnostic approach is more cautious:

- Children with BMI equal to or greater than 85 percentile (± 1 SD) are “at risk of obesity”.
- Children with BMI over 97 percentile (± 2 SD) are “overweight”.
- Children with BMI equal to or greater than 99 percentile (± 3 SD) are considered “obese”
- This approach, more careful, is due to the different analysis that can be made even with differences of few kilos. In fact, after a diagnosis of obesity, some children could erroneously be kept on a hypocaloric diet.

Purpose of this work is to comprehend the predominance of overweight and obese children and their diets in the scholastic population of Marsala (Italy), where we work, in the 2012-2013 school year.

MATERIAL AND METHODS

This work was carried out in Marsala (Trapani, Italy) during the 2012-2013 school year. All the chil-

dren were examined in the clinic of the School Health Service, PM, with validated instruments.

The sampled classes were First grade, Fifth grade and Seventh grade.

The screening was made taking into account the anthropometric measures of the examined children and analysing their diets and lifestyle.

Generally speaking, the Body Mass Index (BMI) is defined as the body mass divided by the square of the body height. From the BMI, specific threshold values are used to define overweight and obesity. If BMI increases, so does the risk of diseases related to excessive weight - in particular diabetes and cardiovascular diseases.

RESULTS

The total population of Marsala taken into account - first, fifth and seventh graders - during the 2012-2013 school year amounted to 2114 subjects, 1041 females and 1073 males.

1873 (88.59% of the whole) participated at the check-up - 911 females and 962 males.

Of all these, the overweight children were 407 (21.72%) - 211 males (21.93%) and 196 females (21.51%).

Obese subjects were 398 (21.24%) - 229 males (23.80%) and 169 females (18.66%).

Overall, the overweight+obese kids were 42.96% (21.72% + 21.24%). The males were a slight majority (45.73%) compared to the females (40.17%).

Looking more closely at these results, it can be observed that the first graders participating were 621 out of 664 - equal to 93.53% of the sample - of these, 296 were females and 325 were males.

The analysed overweight people were 110 (11.7%). Of these, 59 were males (18.15%) and 51 were females (17.22%). The obese subjects were 126 (20.28%). Of these, 74 were males (22.76%) and 52 were females (17.56%)

Overall, the overweight+obese children amounted to 38.00% - 40.92% of males and 34.78% of females.

The fifth graders participating at the check-up were 663 out of 707 - equal to 93.77% of the sample - of these, 325 were females and 338 were males.

The overweight kids were 141 (21.26%). Of these, 63 were males (19.38%) and 78 were females (23.97%). The obese ones were 165 (20.88%). Of these, 92 were males (28.30%) and 73 were females (21.59%)

Overall, the overweight+obese people amounted to 46.14% - 47.68% of males and 44.66% of females.

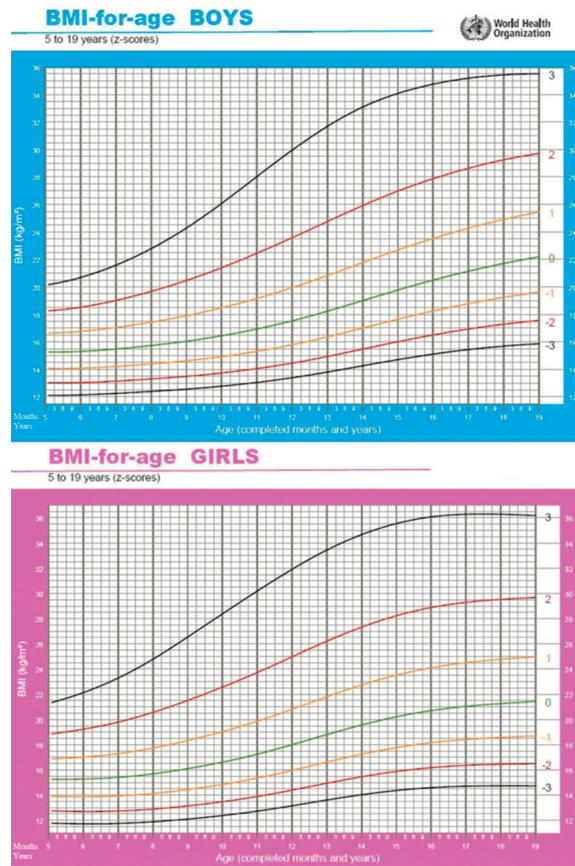


Figure 1. BMI for age: males, above, and females, below (WHO, 2007).

The seventh graders participating at the check-up were 589 out of 743 - equal to 79.27% - of these, 277 were females and 312 were males.

The overweight subjects were 156 (26.48%). Of these, 89 were males (28.52%) and 67 were females (24.18%). The obese children were 107 (18.16%). Of these, 63 were males (20.19%) and 44 were females (15.88%)

Overall, the overweight+obese people amounted to 44.64% - 48.71% of males and 40.06% of females.

CONCLUSIONS

Of 1873 subjects examined - coming from first, fifth and seventh grade - 21.72% resulted overweight and 21.24% obese. These data confirm the necessity of significant actions on the diets and lifestyles of the school population and of the families.

FIRST GRADER			SEVENTH GRADER		
Target 664 Present 621 (93.52% target)	FEMALES 296	MALES 325	Target 743 Present 589 (79.27% target)	FEMALES 277	MALES 312
Overweight	110	17.7%	Overweight	156	26.48%
Males	59	18.15%	Males	89	28.52%
Females	51	17.22%	Females	67	24.18%
Obese	126	20.28%	Obese	107	18.16%
Males	74	22.76%	Males	63	20.19%
Females	52	17.56%	Females	44	15.88%
Overweight+Obese	38.00%		Overweight+Obese	44.64%	
Overweight+Obese males	40.92%		Overweight+Obese males	48.71%	
Overweight+Obese females	34.78%		Overweight+Obese females	40.06%	

FIFTH GRADER		
Target 707 Present 663 (93.77% target)	FEMALES 325	MALES 338
Overweight	141	21.26%
Males	63	19.38%
Females	78	23.07%
Obese	165	24.88%
Males	92	28.30%
Females	73	21.59%
Overweight+Obese	46.14%	
Overweight+Obese males	47.68%	
Overweight+Obese females	44.66%	

Table 1. Child obesity in the school population of the city of Marsala, Italy (see text).

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