A national survey of the prevalence of overweight and obesity in Greece: The GRECO STUDY

Farajian, P[1], Risvas, G[1], Karasouli, K[1], Pounis G[1], Panagiotakos, DB[2], Zampelas, A[1]

[1] *Unit of Human Nutrition, Department of Food Science and Technology, Agricultural University of Athens, Greece*

[2] *Department of Nutrition and Dietetics, Harokopio University, Athens, Greece*

1. INTRODUCTION & AIM

The increased prevalence of overweight (OW) and obesity (OB) among children is a severe public health problem across the developed and the developing world. Several surveys conducted at local or regional level in Greece have noted some geographic differences in paediatric obesity levels, although the magnitude has been difficult to assess because of differences in methods, definitions and limited geographic coverage. Additionally, there is a paucity of nationwide data concerning the epidemiology of excess weight in children making it difficult to evaluate the magnitude of the problem. The suggested rapid increase in the prevalence of obesity in Greece during the last decades, primarily suggests that nutritional factors play a significant role. Traditional food choices based on the Mediterranean diet pattern, are being abandoned and being replaced by energy-dense and low in micronutrients foods. However, there are limited studies in children investigating the association between adherence to the Mediterranean diet and obesity. The aim of the present paper from the **Gre**ek **C**hildhood **O**besity **(GRECO)** study is to provide current national data on overweight and obesity prevalence in preadolescent schoolchildren (aged 10-12 years old) in Greece, and to evaluate the quality of children's diet by assessing the degree of adherence to the Mediterranean diet.

2. SUBJECTS & METHODS

In order to provide estimates of overweight and obesity among Greek schoolchildren a nationwide survey was performed among fifth and sixth grade students aged 10-12 years old. A stratified sampling by 10 regions of the country was used to obtain a representative sample (Figure 1). The total sample consisted of 4786 children (mean age of 10.9±0.75 years). Children were weighed and measured and completed a semi-quantative food frequency questionnaire with a supplementary section for the assessment of dietary and behavioral aspects and physical activity levels (the Physical Activity Questionnaire for Older Children). Additionally, the KIDMED index was used to evaluate the degree of adherence to the Mediterranean diet (MD).

3. RESULTS

According to the IOTF cut-offs, overweight (OW) and obesity (OB) prevalence among boys was 29.6% and 12.4%, respectively, while in girls 28.3% and 10% (Table 1). The prevalence of OW and OB was higher in boys than girls. Concerning the prevalence of thinness (including thinness grades 1, 2, and 3), it was found to be significantly higher in girls than boys. When comparing the overweight and obesity prevalence between large urban and semi-urban or rural regions no differences were found. Additionally, no differences were found between different age groups concerning OW and OB prevalence, for both genders. Only 4.3% of the children had an optimal KIDMED score, while the 46.8% were classified as low adherers to the MD. KIDMED score did not differ between boys and girls and no differences were detected between normal weight and OW and OB children. However, children from semi-urban or rural regions had higher score. Furthermore, children with higher KIDMED score reported following a healthier diet and having higher physical activity levels (Table 2).

Figure 1. The prefectures in Greece included in the study

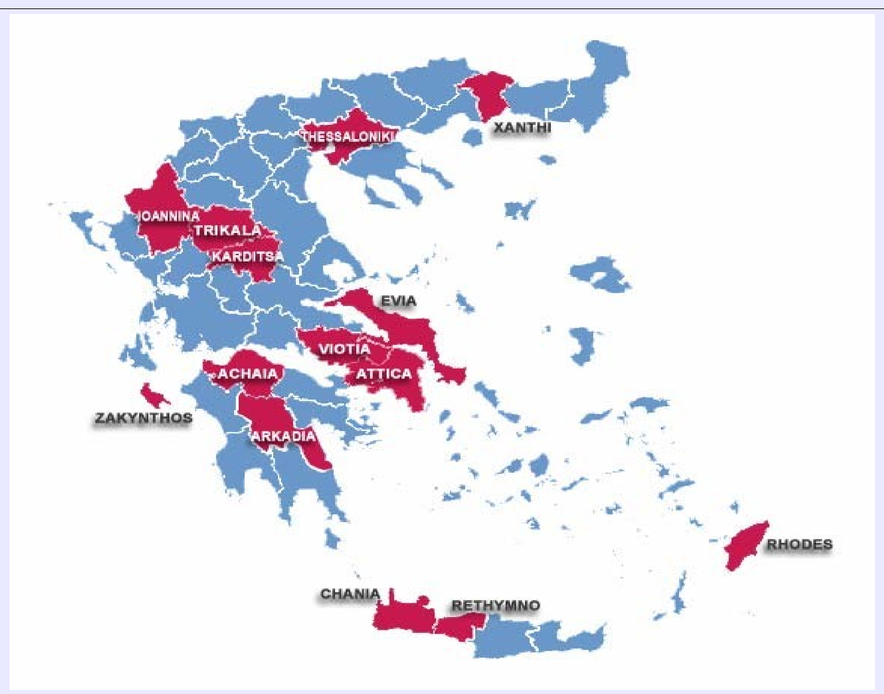

TABLE 1: Prevalence of overweight, obesity and underweight in Greek 10-12 years old children

	Overweight	Obese	Underweight
Boys	29,6* (28,3 30,9)	12,4* (11,5 13,3)	3,3 (2,52 3,48)
Girls	28,3 (27,02 29,58)	10,0 (9,15 10,85)	5.0* (4,36 5,58)
Total	29.0 (27.7-30.2)	11.2 (10.3-12.1)	4.2 (3.64 4.76)

* P-values derived through Pearson's X^2-test for independence between boys and girls

TABLE 2: Anthropometric and lifestyle characteristics according to KIDMED score categories[1]

	KIDMED			p[2]
	≤3	4-7	≥8	
N (%)	2240 (46.8)	2341 (48.9)	205 (4.3)	
Age (yr)	10.93±0.76	10.90±0.75	10.90±0.73	0.982
Male gender, %	48.4	49.3	51.7	0.595
BMI (kg/m²)	20.3±3.9	20.2±3.7	20.4±3.8	0.325
WC (cm)	68.9±9.7	68.3±9.6	68.4±9.8	0.139
W/Hp ratio (cm/cm)	0.83±0.08	0.83±0.07	0.83±0.08	0.554
W/Ht ratio (cm/cm)	0.46±0.06	0.46±0.06	0.46±0.06	0.107
% BF	21.3±9.0	20.9±8.8	20.8±8.5	0.268
IPAQ score	2.87±0.62	3.00±0.58	3.05±0.60	<0.001

[1] Values are means ± SD or percentages, respectively

[2] P-values between all groups as derived from ANOVA or Chi-square test

4. CONCLUSIONS

- Using nationally representative data and according to the IOTF cut-offs, we have found that the overall prevalence of OW was 29% and the rate of OB was 11.2%
- The present study shows the alarming magnitude of the paediatric obesity problem in all regions of Greece.
- The current findings are indicating an increased risk for even higher rates of obesity in adulthood in the near future exceeding those currently reported for the Greek adult populations.
- Our findings support previous evidence for low adherence to the dietary patterns of the MD, in children and adolescents in Mediterranean countries.
- There is a a positive relationship between adherence to the MD and better diet and lifestyle quality.
- There is an emerging need for preventing measures, and anti-obesity health policy interventions.

CONTACT DETAILS:
Dr. Antonis Zampelas
E-mail: azampelas@aua.gr