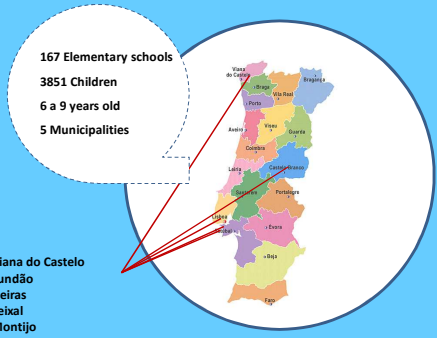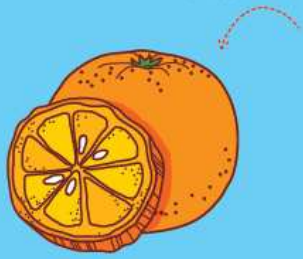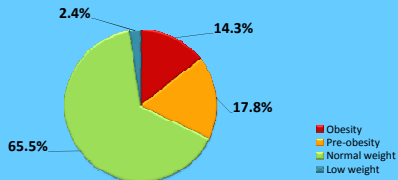## 18th EUROPEAN CONGRESS ON OBESITY

Demographic variables and childhood obesity in a community-based program in Portugal

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INTRODUCTION: It is well known that obesity is one of the most Public Health's concerns especially among children. The prevalence of overweight and obesity have been increasing consistently throughout the European Union (EU), affecting everyday a higher number of children and adolescents. Recent data reports that childhood obesity in Portugal increased in the last years, representing nowadays 32.1% of overweight and 14.5% of obesity[1]. Family as the primary children source of social learning's, habits and behaviors' influence and exposure have shown a basic determinant to food and physical activity children' choices[2,3,4]. The role of demographic and family/parental patterns in childhood obesity suggests that urban areas and small family size either with single-parent or no siblings are associated with larger increases in Body Mass Index [2,3,5]. Adequate urban environments could be one of the main areas of action for obesity prevention, linked with high density food energy consumptions, based on simple sugars, saturated fats and salty ingredients. Family as a social environment provides interpersonal skills working as an important instrument in shaping and maintaining eating and physical activity behaviors. A community-based program in health promotion can act in the main areas of action for the protection of the children population against health threats and the promotion of guidelines that can lead to healthier life-styles. Community-based health programmes focus on family educational policies and strategies have been developed in some EU Countries, showing relevant impact on health patterns and a decrease on childhood obesity prevalence's [6,7]. Based on the recognized success of these programmes we developed the community-based programme defined as Munsi in order to identify the main factors behind the Portuguese nutritional children status and create an healthy community life-style.

167 Elementary schools

3851 Children

6 a 9 years old

5 Municipalities

› Viana do Castelo
› Fundão
› Oeiras
› Seixal
› Montijo

METHODS: This study is framed from a longitudinal municipal project (MUNSI), which included 3173 children (6-9 years old) from 167 public schools conducted on five municipalities (Viana do Castelo, Fundão, Oeiras, Seixal and Montijo). Childhood nutritional status was assessed by anthropometric parameters (weight and height), obtained by trained examiners and calculated by de CDC growthcharts criteria percentiles of BMI. Demographic condition and parent's level education were collected by a self-response family' questionnaire. Subdivision by residence area were assessed by Territorial Institute of Statistics criteria into Predominantly Urban Areas (APU), Moderately Urban Areas (AMU) and Predominantly Rural Areas (APR) (INE, 2004). The Odds Ratio was calculated with a 95% Confidence Intervals.

RESULTS: The prevalence of overweight (pre-obesity and obesity) (BMI≥P85) was 32.1%, where 14.3% were obese (BMI≥P95) (graphic 1), distributed equally throughout boys and girls (14.4% and 14.1%, respectively). Children who lived in urban areas showed higher obesity prevalence (14.4%) compared with those residing in rural areas (13.3%) associated also with higher odds ratio (OR=1.12; CI:0.8-1.6) however with no statistic significance. According to family household, small families size showed higher obesity prevalence (17.1%) with a OR=1.6 (CI:1.1-2.3) statistically significant (p<0.05), compared to families who had more elements (table 1).

2.4%   14.3%

17.8%

65.5%

■ Obesity
■ Pre-obesity
■ Normal weight
■ Low weight

Graphic 1

	Total (n)	Obesity		OR (95% CI)
		n	%	
Urban areas	1882	317	14.4	1.12 (0.8-1.6)
Family size (3 elements)	572	98	17.1	1.6 (1.1-2.3)*

Table 1
*0.05

CONCLUSION: Environmental factors such the urban areas and family household should be considered as important contributing factors for childhood obesity. To better understand the epidemiology of theses factors future research should attempt to quantify and elucidate them more precisely. The Munsi as a community-based programme is an effective approach on the childhood community leading to a better understanding of the obesity factors.
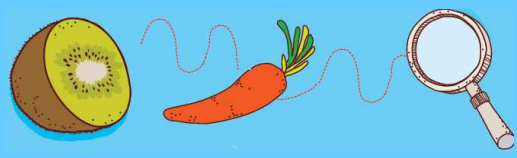
1 Rito A, Breda J. **Prevalence of childhood overweight and obesity in Portugal – the National Nutritional Surveillance System – COSI** Portugal. Obes Reviews. 2010.
2 Chen A, Escarce J. 2010. **Family structure and childhood obesity, Early Childhood Longitudinal Study — Kindergarten Cohort.** Prev Chronic Dis 2010. 2010;7(3):1-8.
3 Huffman F, Kanikireddy S, Patel M. (2010). **Parenthood - A Contributing Factor to Childhood Obesity.** Int. J. Environ. Res. Public Health. 2010;7:2800-10.
4 Gibson L, Byrne S, Davis E, Blair E, Jacoby P, Zubrick S. **The role of family and maternal factors in childhood obesity.** Medicine and the Community. 2007;186:591-595.
5 Juliusson P, Eide G, Roelants M, Waaler P, Hauspie R, Bjerknes R. 2010. **Overweight and obesity in Norwegian children: prevalence and socio-demographic risk factors.** Acta Pædiatrica. 2010;99:900–905.
6 Kleiser C, Rosario A, Mensink G, Prinz-Langenoh R, Kurth B. **Potential determinants of obesity among children and adolescentes in Germany: results from the cross-sectional KiGGS study.** BMC Public Health. 2009;9:46.
7 Lasserre A, Chiolero A, Paccaud F, Bovet P. **Worldwide trends in childhood obesity.** Swiss Medical Weekly. 2007;137:157-158.