

## MUNSI – A PORTUGUESE COMMUNITY-BASED PROGRAMME

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**BACKGROUND:** The prevalence of overweight and obesity have been increasing consistently throughout the European Union (EU), especially in Portugal, affecting, everyday, a higher number of children and adolescents. Portugal has one of the most negative scenarios in Europe, one of the countries with the highest prevalence of childhood obesity, representing nowadays 32.2% of overweight and 14.6% of obesity, and also one of the highest prevalence of physical inactivity in the EU. A community-based action program in health promotion can identify the main areas of action for the protection of the population against health threats and the promotion of guidelines that can lead to healthier life-styles. Therefore, nutrition and physical activity-linked problems, in particularly obesity, are specific health concerns for which health promotion strategies are set, where the role of local authorities is clear, whether in physical activity interventions, creation of adequate urban environments and the availability of healthy foods in the school community. MUNSI Project works from the cooperation between the Ministry of Health (DGS/PCO), the Municipalities of Fundão, Oeiras, Montijo, Seixal and Viana no Castelo, and University Atlântica, which has, as main objective, the development of a local Integrated System of childhood Nutritional surveillance at family and school level.

**METHODS:** A cross-sectional study was conducted on five municipalities (Viana do Castelo, Fundão, Oeiras, Seixal and Montijo), which included 3173 children (6-9 years old), attending the universe of public elementary schools (n=167). This Project embodies three stages (from 2008 to 2011): assessment of the nutritional status of children according to the classification criteria of the *Centers for Disease Control and Prevention* (CDC, 2000) for body mass index (BMI), relating with socioeconomic, demographics and environmental factors with health, collected by a family questionnaire. The children BMI and school characteristics were collected by Municipality examiners/field workers, submitted to anthropometric training sessions and information of children's nutritional status. A specific intervention in health promotion for children was implemented at school level through a set of training activities involving teachers, school assistants and cooks, based on healthy lifestyle and healthy food habits, specially fruits and vegetables, also physical activity promotion at school and family environment. The impact of the program has been assessed during the scholar year (2010/2011) through monitoring and evaluating the dimensions firstly selected. **RESULTS:** During the first year of the project, 150 schools participated and 3173 children were assessed. 50.6% were female and the mean age was 7.5 years ( $\pm 0.8$ ). The prevalence of childhood overweight was 32.1% (BMI $\geq$ P85), of which 14.3% were obese (BMI $\geq$ P95). Family, as the primary children source of social learning, habits and behaviors' influence, was associated with children's food choices and physical activity. According to this dimension the data showed that small family size was associated with higher children's BMI (OR=1.6; 95%CI: 1.1-2.3). It was also observed that having a lower level of education, a lower socioprofessional status and an household income of less than €1500 were risk factors for the development of childhood obesity, statistically significant ( $p < 0.05$ ). Children' short sleep duration ( $\leq 8$  hours/day)

showed also an association with childhood obesity (OR=1.5; 95%CI: 1.1-2.1). In relation to child and maternal variables, 90.1% of mothers breastfed their children. Children with high birth weight and that were not breastfed showed an association with overweight: (OR=2.5; 95%CI: 1.3-4.6) (OR=1.6; 95%CI: 1.1-2.2) respectively. The duration of breastfeeding, maternal weight, gestational age and maternal age did not show to be a risk factor for childhood obesity. Related to children food frequency we observed that most children (96.9%) took breakfast every day; a large part of the children ate lunch at school (84.1%) and 15.8% ate lunch at home. The results showed that children who had a daily consumption of sweets showed higher risk in developing obesity (OR=2.3; 95%CI: 1.2-4.3) and the opposite was observed for those who include more than once a day a vegetable soup on their daily diet, representing a protective factor for childhood obesity (OR=0.6; 95%CI: 0.3-1.0). **CONCLUSION:** The results confirm the trends in children's lifestyle that have been found in others Portuguese studies. Environmental factors such as family's and demographics' dimension should be considered as an important contributing factors for childhood obesity so, to better understand the epidemiology of these factors, future research should attempt to quantify and elucidate this on more precise way. The MUNSI showed to be an effective approach as a community-based programme to a better understanding of childhood obesity factors.