

Parental socioeconomic and educational level and child overweight – lessons from a municipality based study

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Introduction

Childhood obesity is one of the most serious Public Health problems in Portugal. Unhealthy food habits and physical activity low levels seems to be the major factors behind this epidemic (1,2,3). According to the literature the socioeconomic conditions can contribute as an obesogenic factor, particularly in families with low incomes and medium educational levels (4). In order to control and reverse the Portuguese trends, community-based programs seems to respond effectively to the childhood obesity condition and their multifactor's (5,6).

Aim

To better understand the association of socioeconomic environment on children nutritional status and to support effective prevention local strategies are the main aims of this municipality intervention study - the MUNSI Project. It was developed based on a joint-venture between the Ministry of Health, the Atlantic University and five Municipalities. The objective was the development of an integrated Nutritional Surveillance Integrated System at the local level and to evaluate the impact of an intervention program to prevent overweight. The socioeconomic, demographic and environmental dimensions analysis were core to this project.

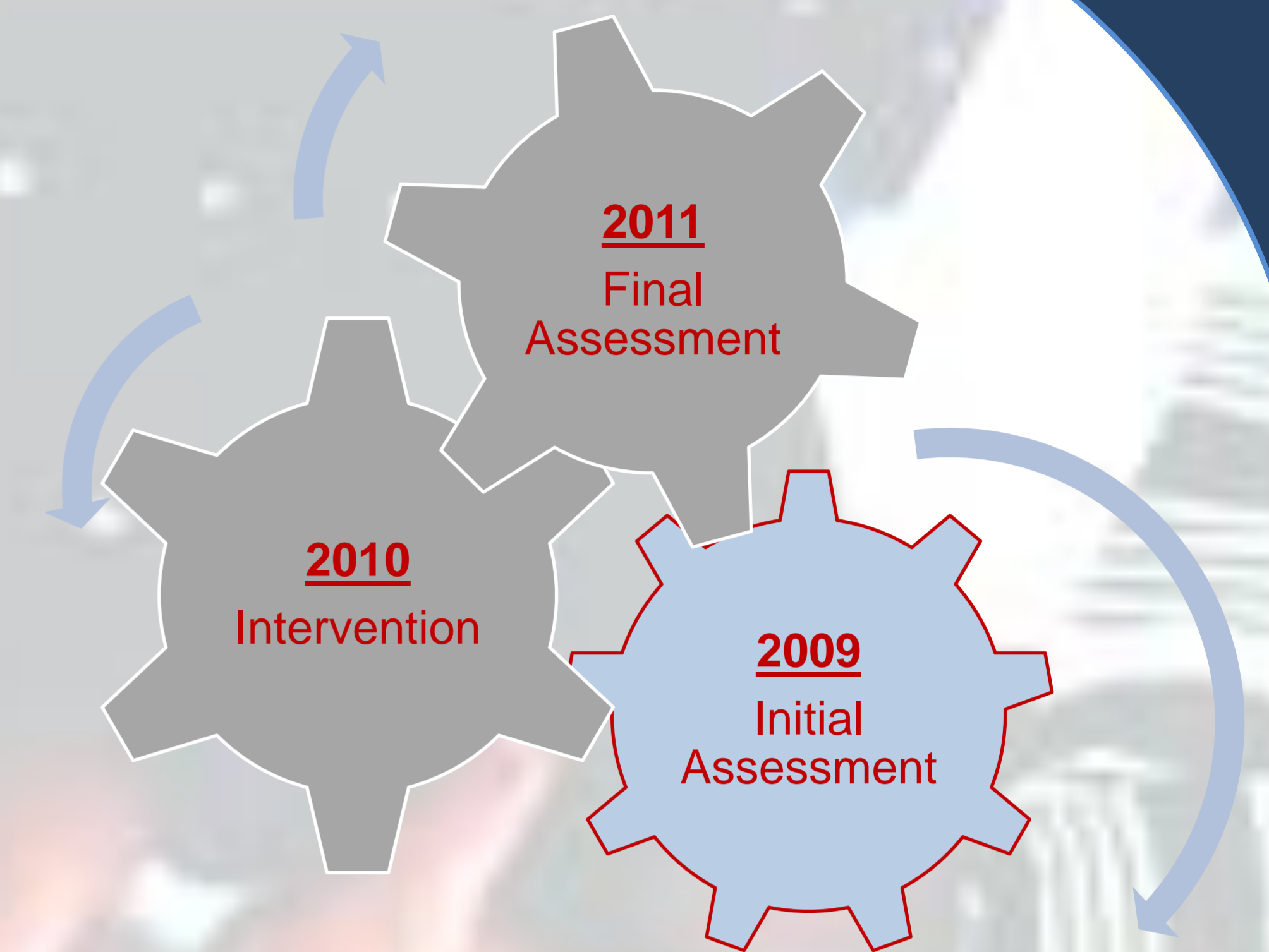


Figure 1. MUNSI Programme development

Results

- The prevalence of Overweight (OW: pre-obesity and obesity) (BMI \geq P85) was 32,3% (n=1005), where 14,4% (n=447) were obese (BMI \geq P95) (graphic 1).
- Higher prevalence of pre-obesity in girls (18,1%, n=283) compared to boys (17,8%, n=275) (graphic 2).

- The risk of OW was higher in medium income families (851-1500€: OR=1,23) where the observed in families with incomes >1500€/month, the risk of OW was lower (OR \leq 0,82) (table 1).

- Mothers showed higher educational level (20,7% had completed high school) compared to the children's fathers (17,8% had completed the middle school).
- In this group was observed that the risk of childhood OW was higher on parents with the middle school as the maximum educational level (table 1).

Methods

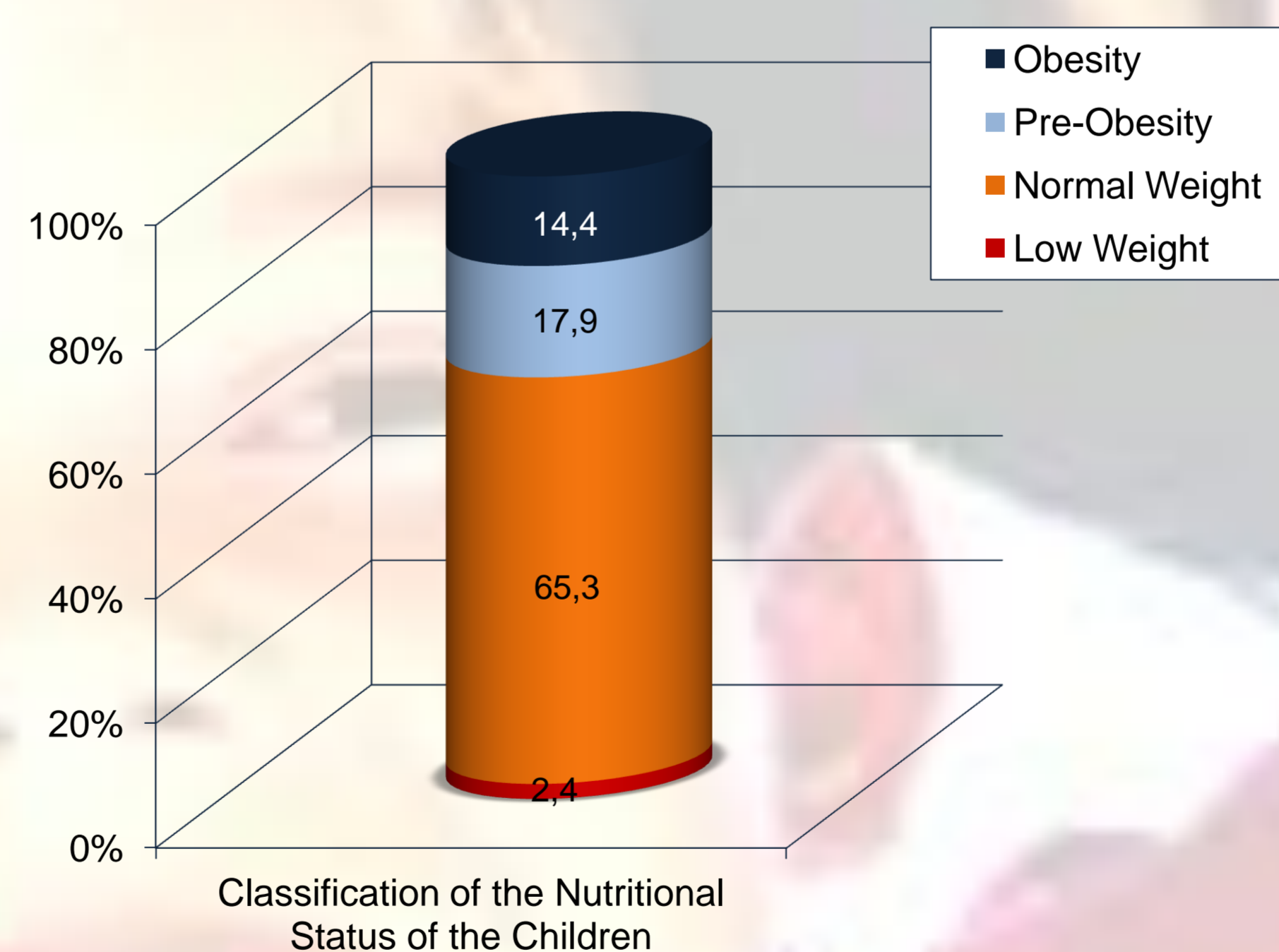
Longitudinal study developed into three periods (2008-2011) (figure 1). The present data results from the first stage, which will be reproduced again at the final stage (2011). During 2010 the intervention plan is being implemented, training all the children's community about a healthy lifestyle and introducing new food habits and more physical activity at school and on their family environment.

1st Stage of MUNSI (2009):

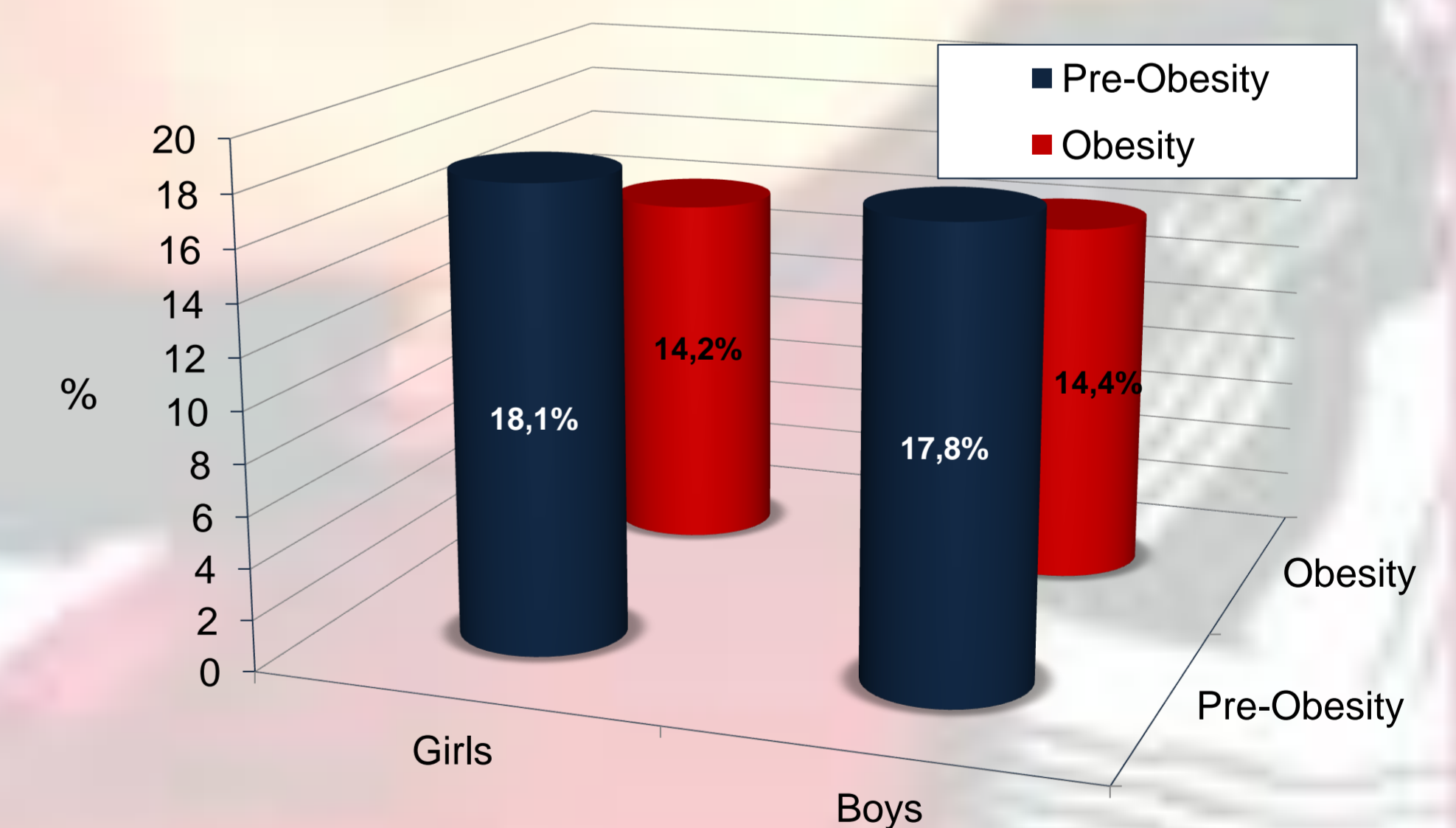
- Nutritional status (NS) was assessed on 3275 school' children aged between 6-9 years old from 168 elementary schools of the municipalities of Oeiras, Seixal, Montijo, Viana do Castelo and Fundão,
- Childhood NS was assessed by anthropometric parameters (weight and height) considering the CDC growthcharts criteria percentiles of BMI, classifying as pre-obese when P85 \leq IMC<P95 and obese when IMC \geq P95.
- Socioeconomic condition and parent's level education were collected by a self-response family' questionnaire
- The child anthropometric data was obtained by trained examiners, from February to March of 2009.

Income (€)	Overweight			OR (IC)	p
	Total	n	%		
<500	808	379	17,1	1,02 (0,87-1,18)	0,87
500-850	1035	493	22,3	1,05 (0,91-1,20)	0,47
851-1500	1491	747	33,7	1,23 (1,09-1,39)	0,001
1501-2750	957	406	18,3	0,80 (0,70-0,93)	0,003
2751-3750	290	122	5,5	0,82 (0,65-1,05)	0,12
>3750	166	67	3,0	0,77 (0,56-1,06)	0,10
Total					
Educational level of the father	Total	n	%	OR (IC)	p
Elementary	582	262	11	0,97 (0,81-1,15)	0,68
Middle School (Stage 2)	1046	527	22,1	1,25 (1,09-1,43)	0,001
Secondary School (Stage 3)	1391	689	28,9	1,23 (1,09-1,39)	0,001
High school	1215	507	21,3	0,80 (0,70-0,91)	0,001
University	965	397	16,7	0,80 (0,69-0,92)	0,001
Total					
Educational level of the mother	Total	n	%	OR (IC)	p
Elementary	483	235	9,5	1,13 (0,94-1,36)	0,21
Middle School (Stage 2)	863	433	17,5	1,23 (1,06-1,42)	0,007
Secondary School (Stage 3)	1327	586	23,6	0,90 (0,79-1,02)	0,13
High school	1463	690	27,8	1,07 (1,00-1,21)	0,27
University	1262	536	21,6	0,84 (0,74-0,95)	0,005
Total					

Table 1. Risk of Overweight by Income and Educational level of the Parents



Graphic 1. Children Nutritional Status



Graphic 2. Prevalence of Overweight by Sex

Conclusion

- From these preliminary finding, Overweight was not independent from parent's middle socioeconomic status and middle parents educational level, where these two conditions seem to be more likely to develop childhood Overweight.

- Further analysis will help to better understand the role of obesogenic factors. This knowledge may identify additional potential effective interventions at local level in order to reverse the obesity trends in Portuguese children and promote a future healthy life style.

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