



Influence of child and maternal variables on childhood obesity in the municipalities of Fundão, Montijo, Oeiras, Seixal and Viana do Castelo

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BACKGROUND

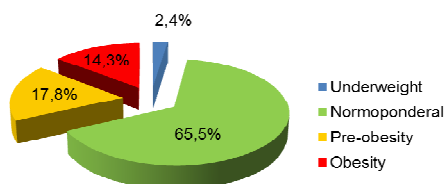
Childhood obesity has been considered a global epidemic and its prevalence has increased worldwide in the last decades¹. Portugal has one of the most negative scenarios in Europe, one of the countries with the highest prevalence of childhood obesity, representing nowadays 32.2% of overweight and 14.6% of obesity², and also one of the highest prevalence of physical inactivity in the European Union. Such trends as gain special interest in the scientific community and their causes have been large studied. In this context it is recognized the importance of more study on obesity³ influences. According to the literature childhood obesity is linked with some child and maternal features³. 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-styles⁴. Munsu Project works from the cooperation between the Health Ministry (DGS/PCO), the Municipalities of Fundão, Oeiras, Montijo, Seixal and Viana do Castelo, and University Atlântica, which has, as main objective, the creation and workability of an Integrated System for Nutritional Observation. This study aims to evaluate the relationship between child and maternal variables and childhood obesity in school aged children from Fundão, Montijo, Oeiras, Seixal and Viana do Castelo municipalities.

METHODS

Longitudinal study developed into three periods (2008-2011). The present data results from the first stage. 167 public schools were selected from the 5 municipalities, where 3851 children were included. The nutritional status was evaluated according the Centers for Disease Control and Prevention (CDC, 2000)⁵ growthcharts criteria percentiles of Body Mass Index (BMI) and the child and maternal variables was obtained from a self-response family questionnaire. The statistics analysis was obtained through descriptive analysis and Binomial Logistic Regression Model was used and the odds ratios for confidence intervals were set at 95 %.

RESULTS

During the first year of the project, it's was implemented a nutritional surveillance system on the 167 schools. 3173 children was evaluated, 50.6% were female with a mean age of 7.5 years ($\pm dp=0.8$). The prevalence of overweight was 32.1% (BMI \geq P85) and 14.3% was obese (BMI \geq P95). Childhood breastfeeding occurred in almost children (90.1%) and showed a protective association with childhood obesity (childhood not-breastfeeding OR=1.6; 95%CI: 1.1-2.2). High children birthweight was positively associated with childhood obesity (OR=2.5; 95%CI: 1.3-4.6). The durability of breastfeeding, maternal weight, gestational age and maternal age did not show relevant link with childhood obesity.



Graphic 1

REFERENCES

- 1 Global status report on noncommunicable diseases 2010. World Health Organization 2011
- 2 Rito A, Paixão E, Carvalho MA, Ramos C. Childhood Obesity Surveillance Initiative Ciosi Portugal 2008. 2010. Lisboa, INSA
- 3 Sabin M, Shieff J. Childhood obesity. In: Korbomilis M (ed): Obesity and Metabolism. Front Horn Res. Basel, Karger, 2008, 36: 85-96 (DOI: 10.1159/000115356)
- 4 Romon et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmes. Health Nutrition. 2008, 1:8.
- 5 CDC (Center for Disease Control and Prevention): 2000 Growth Charts: United States. Available at URL: <http://www.cdc.gov/growthcharts>

Breastfeeding	n total	Prevalence of Obesity		OR unadjusted (95% CI)	OR adjusted** (95% IC)
		n	%		
Yes	2083	287	13.8	V.R.	V.R.
No	231	46	19.9	1.6 (1.1-2.2)*	2.9 (1.4-6.1)*
Total	2314	333	14.4		

** OR adjusted for sex, age of parents, breastfeeding, breastfeeding and durability

* p < 0.05

V.R. - Variable Reference

Table 1. Association between breastfeeding and childhood obesity

Birth weight	n total	Prevalence of Obesity		OR unadjusted (95% CI)	OR adjusted** (95% IC)
		n	%		
Very low birth weight (< 1500 g)	18	0	0.0	//	//
Underweight (1500-2500 g)	148	18	12.2	V.R.	V.R.
Normal weight (2500-4000 g)	1921	271	14.1	1.2 (0.7-2.0)	1.2 (0.7-2.0)
High weight (> 4000 g)	126	32	25.4	2.5 (1.3-4.6)*	2.5 (1.3-4.8)*
Total	2172	308	14.2		

** OR adjusted for sex, age of parents and birth weight

* p < 0.05

V.R. - Variable Reference

Table 2. Association between birth weight and childhood obesity

CONCLUSION

The child and maternal variables are associated with the development of childhood obesity, however in the present study, just not-breastfeeding and children birth weight showed a statistic link with childhood obesity. Furthermore investigation is useful in order to validate these results, and better understand the influence of child and maternal factors on child development. Child and maternal variables are specific health concerns for which health promotion strategies are set, where the role of local authorities is clear.