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Effect of urban vulnerability on the prevalence of infant obesity in Seville[☆]



Efecto de la vulnerabilidad urbana en la prevalencia de obesidad infantil en Sevilla

To the editor:

The global increase in childhood obesity has become a public health problem that requires urgent intervention through the establishment of social welfare and health care policies.¹ The onset of obesity during childhood entails an increase in the number of years that individuals are exposed to the effects of this risk factor for multiple comorbidities and could compromise the sustainability of public health care systems in the future.¹

Multiple studies have evinced the association between childhood obesity and socioeconomic status (SES) in terms of professional category, unemployment, educational attainment or location of residence.^{2,3} The aim of our study was to assess the association and the effect of socioeconomic vulnerability of specific neighbourhoods on the prevalence of overweight and obesity in primary education students in Seville.

The main source of data was the database that we had access to through the Observatorio de la Salud (Health Observatory) of the City of Seville, used by the city to produce the report on childhood obesity in 2017.⁴ We conducted a cross-sectional study on the reference population of 45 377 schoolchildren enrolled in primary education in the 161 schools of the city of Seville (2015–2016 academic year). We

stratified schools using a socioeconomic index calculated for the neighbourhoods where they were located, and selected schools by simple randomization ($n=13$). We also selected classrooms by simple randomization, taking into account the proportions of the total student body that corresponded to the students in each year. The final sample included 2320 schoolchildren aged 6–12 years, for who we obtained height and weight measurements and calculated the body mass index (BMI).

The dependent variable was the prevalence of childhood overweight and obesity, calculated using the child growth standards of the World Health Organization (WHO), which is the reference population that gives rise to the highest estimates of the prevalence of excess weight in children.^{4,5} The independent variables were age, sex and level of urban vulnerability of the neighbourhoods where schools were located. The source of the data used for the latter variable was the *Catálogo de Barrios Vulnerables* (Catalogue of Vulnerable Neighbourhoods),⁶ which classifies the neighbourhoods of Spanish cities according to their urban vulnerability, which is categorised in 4 levels based on unemployment, educational attainment and the state of preservation of residential buildings.

We made bivariate analyses comparing independent variables (age, sex, urban vulnerability) and dependent variables (obesity and/or overweight) by means of the χ^2 test, considering results with a p -value of less than 0.05 statistically significant. We fitted logistic regression models with obesity and overweight as the dependent variable, calculating odds ratios, both crude and adjusted for the 3 independent variables, as well as the corresponding 95% confidence intervals (CIs). We performed the analysis with the software *R* version 3.5.1.

The report on which our study is based concluded that the prevalence of excess weight in primary school students in Seville was 41.6%, using the WHO child growth standards as reference (obesity, 15.3% and overweight, 26.3%).⁴ In our sample, 6 of the 13 schools were located in vulnerable neighbourhoods. The prevalence of childhood

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Table 1 Bivariate analysis of childhood obesity and/or overweight by age, sex and level of urban vulnerability.

Independent variable	Obesity					Overweight					Overweight + Obesity				
	Yes		No		<i>P</i> (χ^2)	Yes		No		<i>P</i> (χ^2)	Yes		No		<i>P</i> (χ^2)
	<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%		<i>n</i>	%	<i>n</i>	%	
Sex															
Female	157	12.9	1063	87.1	.001	320	26.2	900	73.8	.824	477	39.1	743	6.9	.010
Male	195	17.7	905	82.3		293	26.6	807	73.4		488	44.4	612	55.6	
Age (years)															
6–9	229	16.0	1199	84.0	.146	373	26.1	1055	73.9	.676	602	42.2	826	57.8	.487
10–12	123	13.8	769	86.2		240	26.9	652	73.1		363	4.7	529	59.3	
Level of urban vulnerability^a															
None	183	13.7	1154	86.3	.004	358	26.8	979	73.2	.852	541	4.5	796	59.5	.150
Medium	132	16.0	694	84.0		216	26.2	610	73.8		348	42.1	478	57.9	
High	37	23.6	120	76.4		39	24.8	118	75.2		76	48.4	81	51.6	

^a Levels of vulnerability of neighbourhoods: none, low, medium, high and very high (there were no observations for low or very high vulnerability neighbourhoods).

Table 2 Multivariate analysis of childhood obesity and overweight by age, sex and level of urban vulnerability.

Independent variables/Excess weight	OR	95% CI	P	aOR	95% CI	P
Childhood obesity						
Sex						
Female	—	—	—	—	—	—
Male	1.46	1.16–1.83	.001	1.49	1.19–1.88	.001
Age (years)						
10–12	—	—	—	—	—	—
6–9	1.19	0.94–1.52	.143	1.23	0.97–1.57	.086
Level of urban vulnerability ^a						
None	—	—	—	—	—	—
Medium	1.20	0.94–1.53	.142	1.24	0.97–1.59	.084
High	1.94	1.29–2.88	.001	2.03	1.34–3.01	.001
Childhood overweight						
Sex						
Female	—	—	—	—	—	—
Male	1.02	0.85–1.23	.82	1.02	0.85–1.22	.854
Age (years)						
10–12	—	—	—	—	—	—
6–9	0.96	0.80–1.16	.676	0.96	0.79–1.16	.660
Level of urban vulnerability ^a						
None	—	—	—	—	—	—
Medium	0.97	0.79–1.18	.749	0.97	0.80–1.16	.767
High	0.90	0.61–1.31	.604	0.90	0.61–1.31	.588

aOR, adjusted odds ration; CI, confidence interval; OR, crude odds ratio.

^a Levels of vulnerability of neighbourhoods: none, low, medium, high and very high (there were no observations for low or very high vulnerability neighbourhoods).

obesity increased with the vulnerability of the neighbourhood where the school was located: no vulnerability, 13.7%; medium vulnerability, 16.0%; high vulnerability, 26.6% ($P = .004$) (Table 1). We did not detect statistically significant differences in the prevalence of overweight or of excess weight (obesity + overweight) based on the level of vulnerability. The prevalence of childhood obesity was higher in boys than in girls (17.7% vs 12.9%; $P = .001$), and the analysis did not evince significant differences between age groups. The probability of having childhood obesity is 49% greater in boys and twice as high in schoolchildren in schools located in neighbourhoods with a high level of urban vulnerability ($P = .001$) (Table 2).

There is a risk of selection bias in the study on account of a sampling method that, while appropriate for the initial report on obesity,⁴ may not have been ideal for our study. While no schools represented the highest level of urban vulnerability, we detected statistically significant differences in comparison with the reference group. We did not have access to the residential addresses of the schoolchildren that participated in the study, which may have resulted in classification bias. However, since children usually attend a school near the home, it is unlikely that the magnitude of this bias was sufficient to affect the results.

Our findings demonstrate the correlation and deleterious effect of residing in areas of lower SES on the prevalence of childhood obesity. Social welfare and public health policies are required to address socioeconomic inequalities.

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Burnout in paediatric emergency departments^{☆,☆☆}



Burnout en los pediatras de urgencias

To the editor:

Burnout syndrome refers to a maladaptive response to chronic stress at work.¹ It is an important problem in the

health care field that has negative consequences for the professionals that suffer from it and for the patients, who are considered the secondary victims of burnout.^{1,2}

Health care professionals employed in intensive care units and emergency departments are a collective that is particularly at risk of suffering burnout syndrome due to the specific characteristics of these settings (such as high caseloads, insufficient staff, rotating shift schedules).^{1–3} In Spain, no studies have been conducted to analyse this subject in the paediatric emergency department (PED) setting, and therefore the prevalence of burnout in these departments is unknown.

Thus, we conducted a study with the following objectives: 1) to determine the prevalence of burnout syndrome in paediatricians staffing PEDs in Catalonia, and 2) to investigate risk factors for burnout.

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