

Brief original article

Differences in the prevalence of diagnosis of overweight-obesity in Spanish children according to the diagnostic criteria set used

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ABSTRACT

Objective: To examine relevant differences in the prevalence of overweight and obesity in children aged 2-15 years according to different sets of criteria (Orbegozo Foundation, International Obesity Task Force and World Health Organization), and how their use affects the trends in obesity recorded for both sexes between 1995 and 2011 in Spain.

Method: Cross-sectional study, a population between 2 and 15 years. Three diagnosis criteria of overweight and obesity were used.

Results: The boys according to the three criteria, showed higher values of overweight and obesity compared to the girls. The lowest levels of overweight and obesity were observed using the Orbegozo tables. **Discussion:** The prevalence of overweight and obesity varies significantly according to the criteria used to define overweight and obesity. The percentiles of the Foundation Orbegozo gave the lowest estimates and the standards of growth of the World Health Organization were higher.

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Diferencias en la prevalencia del diagnóstico de sobrepeso-obesidad en los niños españoles según el tipo de criterio utilizado

RESUMEN

Objetivo: Evaluar si existen diferencias relevantes entre los valores de prevalencia de sobrepeso y obesidad infantil en función de los tipos de criterios utilizados (Fundación Orbegozo, International Obesity Task Force, Organización Mundial de la Salud), y el modo en que su uso afecta a las tendencias sobre obesidad registradas para ambos sexos en España entre 2005 y 2011.

Método: Estudio transversal, en una población de entre 2 y 15 años de edad. Se usaron tres criterios diagnósticos de sobrepeso y obesidad.

Resultados: Los niños, según los tres criterios utilizados, presentaron valores superiores de sobrepeso y obesidad en comparación con las niñas. Las cifras más bajas de sobrepeso y obesidad se observaron al emplear las tablas de Orbegozo.

Discusión: Las prevalencias de sobrepeso y obesidad varían de manera significativa según los criterios utilizados para definir sobrepeso y obesidad. Los percentiles de la Fundación Orbegozo proporcionan las estimaciones más bajas, y los estándares de crecimiento de la Organización Mundial de la Salud las más altas.

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Introduction

Obesity, which the World Health Organisation (WHO) refers to as a '21st century epidemic', is an increasingly important problem

worldwide. Early diagnosis is vital in the prevention of its associated morbidity.

Despite their limitations, growth curves based on body mass index (BMI) are the tools most often used in epidemiological studies and screening programmes for determining childhood overweight-obesity. Indeed, their use is recommended by different expert groups.¹ However, no consensus exists that might allow the establishment of unified diagnostic criteria for childhood obesity.

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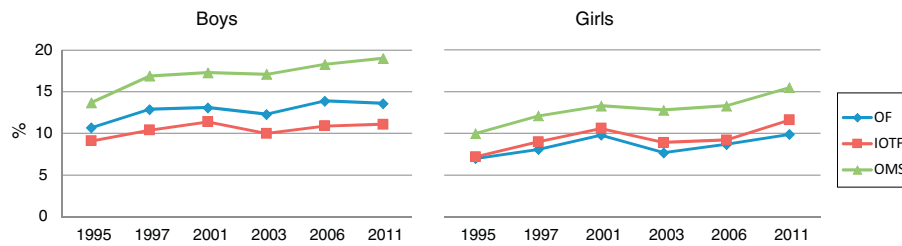


Figure 1. Prevalence of obesity in Spanish children according to sex and year depending on the diagnostic criteria set used. IOTF: International Obesity Task Force; OF: Orbegozo Foundation; WHO: World Health Organization.

Indeed, several institutions have established cut-offs in the hope of reaching agreement. The choice of reference curve is, of course, of great importance; a child of a particular sex, age and BMI might be classified as obese by one, but not by another² Two of the most commonly used sets of criteria for establishing obesity are those of the International Obesity Task Force (IOTF)³ and the 2006 and

2007 criteria of the WHO for children aged 0-5 years and 5-19 years respectively.⁴ Another criteria is Orbegozo Foundation (OF), used in Spain.^{5,6}

The aim of the present work was to examine the differences in the prevalence of overweight and obesity in children aged 2-15 years arising from the use of different sets of criteria (OF, IOTF and

Table 1
Prevalence of overweight and obesity in Spanish children according to the set of diagnostic criteria used.

		OF			IOTF			WHO		
		N	%	(95%CI)	n	%	(95%CI)	n	%	(95%CI)
Total	Overweight	131	7.2	(2.8-11.6)	224	12.4	(8.1-16.7)	260	14.4	(10.1-18.7)
	Obesity ^{b,c}	161	8.9	(4.5-13.3)	147	8.1	(3.7-12.5)	215	11.9	(7.6-16.2)
Boys	Overweight	65	7	(0.8-13.2)	112	12.1	(6.1-18.1)	149	16.1	(10.2-22)
	Obesity	99	10.7	(4.6-16.8)	84	9.1	(2.9-15.3)	127	13.7	(7.7-19.7)
Girls	Overweight	66	7.5	(1.1-13.9)	112	13	(6.5-18.9)	111	13	(6.4-18.8)
	Obesity	62	7	(0.6-1.4)	63	7.2	(0.8-13.6)	88	10	(3.7-16.3)
1997	Overweight ^{b,c}	138	7.8	(3.3-12.3)	236	13	(9.0-17.6)	249	14	(9.8-17.3)
	Obesity ^{b,c}	187	11	(6.1-14.9)	172	9.7	(5.3-14.1)	258	15	(10.2-18.8)
Boys	Overweight	73	8	(1.4-14.2)	128	14.1	(8.1-20.1)	130	14.3	(8.3-20.3)
	Obesity	117	12.9	(6.8-19)	94	10.4	(4.2-16.6)	143	16.9	(10.8-23)
Girls	Overweight	65	7.5	(1.1-13.9)	108	12	(6.2-18.6)	119	14	(7.5-19.9)
	Obesity	70	8.1	(1.7-14.5)	78	9	(2.6-15.4)	105	12	(5.9-18.3)
2001	Overweight ^{b,c}	598	11	(8.6-13.6)	1038	19	(16.8-21.6)	1243	23	(20.7-25.3)
	Obesity ^{b,c}	544	10	(7.6-12.6)	510	9.4	(6.9-11.9)	812	15	(12.5-17.5)
Boys	Overweight	309	11	(7.6-14.6)	548	20	(16.4-23.0)	683	25	(21.4-27.8)
	Obesity ^{b,c}	341	12	(8.8-15.8)	277	10	(6.5-13.5)	475	17	(13.7-20.5)
Girls	Overweight	289	11	(7.4-14.6)	490	19	(15.2-22.2)	560	21	(17.9-24.7)
	Obesity	203	8	(4.0-11.4)	233	8.9	(5.2-12.6)	337	13	(9.2-16.4)
2003	Overweight ^{b,c}	598	11.1	(8.6-13.6)	1038	19.2	(16.8-21.6)	1243	23	(20.7-25.3)
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	Obesity ^{b,c}	203	7.7	(4.0-11.4)	233	8.9	(5.2-12.6)	337	13	(9.2-16.4)
2006	Overweight ^{a,b,c}	677	11	(8.9-13.7)	1225	20	(18.1-22.7)	1430	24	(21.6-26.0)
	Obesity ^{a,b,c}	680	11	(8.9-13.7)	604	10	(7.7-12.5)	953	16	(13.6-18.2)
Boys	Overweight	366	11.9	(8.6-15.2)	645	20.9	(17.8-24)	788	25.6	(22.6-28.6)
	Obesity ^{b,c}	427	13.9	(10.6-17.2)	335	10.9	(7.6-14.2)	564	18.3	(15.1-21.5)
Girls	Overweight	311	11	(7.3-14.1)	580	20	(16.7-23.1)	642	22	(18.8-25.2)
	Obesity ^{b,c}	253	8.7	(5.2-12.2)	269	9.2	(5.7-12.7)	389	13	(9.9-16.7)
2011	Overweight ^{b,c}	443	12	(8.8-14.8)	723	19	(16.4-22.2)	839	22	(19.6-25.2)
	Obesity ^{b,c}	445	12	(8.9-14.9)	425	11	(8.3-14.3)	652	17	(14.5-20.3)
Boys	Overweight	265	13	(9.1-17.3)	418	21	(16.9-24.7)	494	25	(20.8-28.4)
	Obesity ^{b,c}	272	14	(9.5-17.7)	222	11	(7.0-15.2)	381	19	(15.1-22.9)
Girls	Overweight	178	10	(5.8-14.6)	305	18	(13.2-21.8)	345	20	(15.6-24.0)
	Obesity ^{b,c}	173	10	(5.4-14.4)	203	12	(7.2-16.0)	271	16	(11.2-19.8)

95%CI: 95% confidence interval; IOTF: International Obesity Task Force; OF: Orbegozo Foundation; WHO: World Health Organization.

- ^a Significant difference between OF and IOTF results.
 - ^b Significant difference between OF and WHO results.
 - ^c Significant difference between IOTF and WHO results.
- Significance was set at $p \leq 0.05$.

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