



ORIGINAL ARTICLE

# Overweight and obesity prevalence estimates in a population from Zaragoza by using different growth references<sup>☆</sup>



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## KEYWORDS

Overweight;  
Obesity;  
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Childhood;  
Body mass index;  
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## Abstract

**Objectives:** To investigate the prevalence of overweight and obesity among our pediatric population and observe whether the use of different growth references for classification produces significant differences.

**Material and methods:** A total of 35,824 boys and girls aged between 2 and 14 years were included. Body mass index (BMI) was used to calculate the prevalence of overweight–obesity by age and sex. Prevalence was obtained by using a set of national references (Hernández standards) and the references of World Health Organization (WHO standards). Prevalences were compared for each age and sex subset, as well as with the percentage of patients who had an overweight–obesity diagnosis in the clinical record.

**Results:** The overall prevalence of overweight–obesity among children aged 2–14 years was 17.0% (95% CI, 16.1–18.0%) according to the Hernández standards vs 30.8% (95% CI, 29.9–31.7%) according to WHO standards (10.1% vs 12.2% obese, and 6.9% vs 18.6% overweight). It was significantly higher in boys, by both standards, due to the higher prevalence of obesity. By using the Hernández standards the prevalence was significantly lower than by using WHO standards for all ages and for both sexes. A low percentage of patients were found to have an obesity–overweight diagnosis in the clinical record (from 3% to 22% at the ages of 2 and 14 years, respectively).

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**Conclusions:** The prevalence of overweight–obesity in our population is high, especially among boys. Using Hernández standards leads to an under-estimation of the problem, especially because it detects less overweight patients; thus, we recommend using the WHO standards in our daily practice. The low number of overweight–obesity diagnoses in the clinical records might reflect that there is little awareness of the problem by the professionals.

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## PALABRAS CLAVE

Sobrepeso;  
Obesidad;  
Prevalencia;  
Infancia;  
Índice masa corporal;  
Estándares  
crecimiento

## Estimación de la prevalencia de sobrepeso y obesidad infantil en un sector sanitario de Zaragoza utilizando diferentes estándares de crecimiento

### Resumen

**Objetivos:** Conocer la prevalencia de sobrepeso y obesidad en nuestro medio y objetivar si hay diferencias significativas al utilizar los estándares de crecimiento de Hernández o los de la Organización Mundial de la Salud (OMS).

**Material y métodos:** el 35824 niñas y niños de 2 a 14 años. Para determinar las prevalencias, mediante ambos estándares (Hernández y OMS), se utilizó el índice de masa corporal. Se compararon y se analizaron las diferencias de prevalencias por edad y sexo y con el porcentaje de pacientes que tenían registrado algún diagnóstico de obesidad-sobrepeso en la historia clínica.

**Resultados:** La prevalencia global de sobrepeso-obesidad de 2 a 14 años fue del 17,0% (IC del 95%, 16,1%-18,0%) según estándares de Hernández y del 30,8% (IC del 95%, 29,9%-31,7%) según estándares OMS (obesidad 10,1% y 12,2%, sobrepeso 6,9% y 18,6%, respectivamente). Fue significativamente mayor en varones, según ambos estándares, debido a la mayor prevalencia de obesidad. Con los estándares de Hernández se obtuvieron prevalencias significativamente menores que con los de OMS, en todas las edades y en ambos sexos. Detectamos un bajo porcentaje de registro del diagnóstico (del 3 al 22% a los 2 y 14 años, respectivamente).

**Conclusiones:** En nuestra población, la prevalencia de sobrepeso-obesidad es alta y es mayor en varones. La utilización de los estándares de Hernández infravalora la sobrecarga ponderal, sobre todo porque detecta menos pacientes con sobrepeso, por lo que creemos que sería preferible incorporar los estándares de OMS de forma sistemática a la práctica diaria. El escaso registro del diagnóstico de sobrepeso-obesidad en la historia clínica podría reflejar una escasa percepción del problema por parte de los profesionales.

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## Introduction

Childhood obesity has increased in recent decades to epidemic proportions across the world.<sup>1–3</sup> In Spain, its prevalence varies in relation to the time and place in which studies have been performed, and to the reference standards used. In the Enkid study,<sup>4</sup> the overall prevalence of excess weight (overweight and obesity) was 26% in a population aged 0–24 years using the Hernández standards. A study conducted in Navarre<sup>5</sup> on a sample that included all children 0–14 years of age in that autonomous community found an overall prevalence of excess weight of 28% using the standards and criteria established by the World Health Organization (WHO).<sup>6</sup> Recently, a study with data from 18 European countries that used the International Obesity Task Force reference reported an excess weight prevalence of 32.3% for 4-year-old children in Spain, the highest in all of Europe.<sup>7</sup>

Obesity is a risk factor for other diseases, and has a high morbidity and mortality in adulthood associated to elevated health care costs. A high body mass index (BMI) in childhood

and adolescence is associated with a higher percentage of body fat and is a risk factor for coronary heart disease.<sup>8</sup> Spain's Ministry of Health has promoted the NAOS strategy,<sup>9</sup> one of whose objectives is the early diagnosis and epidemiological control of this disease.

The BMI is considered a good indicator of excess weight, both for clinical and epidemiological purposes, and makes it possible to compare results between studies. Yet, currently there is controversy surrounding which of the child growth standards should be used and which cutoff points applied for diagnosing obesity and overweight.<sup>10</sup> The WHO standards have already been accepted and incorporated into clinical practise in 125 countries,<sup>11</sup> and constitute the only published standard based on a longitudinal study of the growth of healthy children that had been born to healthy mothers who did not smoke and that had received optimal nutrition (breastfed for a minimum of 4 months).

In Spain, there is no set standard that is uniformly used to monitor the growth of children in the different autonomous communities. However, the clinical practise guideline for the prevention and treatment of obesity in children and

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