

Juvenile obesity: What is its real prevalence in Spain?[☆]

Obesidad juvenil: ¿cuál es su prevalencia real en España?

Sir,

Obesity is a major public health problem and a risk factor associated with the development of the main chronic diseases and with an increase in mortality. The identification of obesity in young people makes it possible to design preventive strategies.

Body mass index (BMI, weight in kilograms/squared height in meters)¹ is the best anthropometric indicator for diagnosing obesity in children and adolescents because it is correlated to percent body fat, but it does not allow for discriminating body fat distribution. Metabolic complications and cardiovascular risk in obesity are related to percent visceral fat, clinically manifested as central or abdominal obesity (AO).²

The assessment of obesity is more difficult in children and adolescents as compared to adults because of the changes which occur during growth. Thus, percentiles by age and sex should be used to assess obesity in subjects younger than 18 years. There is, however, no agreement on the cut-off points for overweight and obesity in children and adolescents. The BMI cut-off point recommended by the European Childhood Obesity Group³ is the 95th percentile, although other studies use the 97th percentile,⁴ while the 90th percentile is well established as the cut-off point for waist circumference (WC).

In addition, some non-pediatric publications usually report prevalence data of juvenile obesity using adult criteria (BMI or WC in absolute numbers) with no adjustment to percentiles for age and sex.

Our aim was to assess the prevalence of obesity and abdominal obesity (AO) using criteria in absolute numbers or tables with percentiles by age and sex, and to compare both.

The sample consisted of 69 subjects of both sexes aged 14–18 years (47.8% male and 52.2% female) from a population sample of the Spanish province of Cáceres consisting of 1459 subjects selected by stratified sampling from the four healthcare areas of the province. Health centers from each healthcare area were randomized in a number proportional to the area population; three physician-assigned patient populations from each health center were randomly selected, and 60 subjects were randomly selected from each population. Weight and height were measured using certified scales and a stadiometer respectively, and were used to calculate BMI (kg/m²). WC (in cm) was measured at the midpoint between the lower margin of the last rib and the iliac crest. Percentiles were calculated using national BMI tables from the Orbeozo foundation.⁵ Obesity was defined as BMI in the 97th per-

centile or higher, and AO as WC in the 90th percentile or higher, both for age and sex.⁶

Mean BMI was 21.62 ± 3.95 kg/m² (range, 16.85–37.23). Based on national percentile standards, 8.7% of subjects were obese (6.1% of males and 11.1% of females). When adult obesity criteria (BMI ≥ 30 kg/m²) were used, a 4.3% prevalence was obtained (6.1% in males and 2.8% in females).

Mean WC was 79.97 ± 10.49 cm (range, 65–124.2), and AO prevalence based on percentile tables⁵ was 43.5% (33.3% in males and 66.7% in females). When absolute values were used for WC (>102 cm in males and >88 cm in females) AO prevalence was 7.95% (2.9% in males and 13% in females).

Obesity is indirectly assessed using fixed cut-off points for BMI and WC, which are well established for adults, but which underestimate its actual prevalence when used for children and adolescents.⁷

Our results agree with those of recent prevalence studies such as the Carmona study,⁸ whose authors reported a 9.4% prevalence of obesity (6.5% in males and 11.3% in females) in a population aged 15–17 years. When the criterion used was a BMI 30 kg/m², its prevalence was 2.6% in males and 5.5% in females, similar to the prevalence estimated by our group. This prevalence of obesity is lower than that reported by the national reference study enKid,⁹ which was 12.5% (15.8% in males and 9.1% in females) in a population aged 15–17 years. In the Escribano García et al.⁹ study, obesity prevalence based on absolute BMI values was 9.8% in the 15–35 years age group (11.4% in males and 8.5% in females). This is higher than the prevalence found in our study and in the Carmona study⁸ in a younger population using the same criterion, probably because it was estimated in an older population with a greater prevalence of obesity.

As regards AO, we found a lower prevalence as compared to the Almendro et al. study (43.15 vs 88%), but a much higher prevalence than when it was estimated with absolute WC values, according to which AO prevalence was 7.95%. By contrast, in the Escribano García et al. study,² its prevalence in the 15–34 years age group was 15.2% (9.8% in males and 20.6% in females).

Despite the small sample size, our results suggest that the use of BMI in a young population underestimates obesity prevalence, and that the use of absolute WC values underestimates AO prevalence as compared to the use of percentiles for age and sex. Moreover, the prevalence of obesity in the Spanish juvenile population analyzed in our study was slightly lower than that reported in Spanish reference publications.⁴

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