Distribution of obesity indices among European preschool children and associated risk factors: the ToyBox-study

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Objectives

To evaluate the distribution of the anthropometric obesity indices among preschool children aged 3.5-5.5 years, from six European countries, and to examine their associations with certain obesity-related risk factors.

Methods

Cross-sectional baseline study of 7576 children from six European countries - Belgium, Bulgaria, Germany, Greece, Poland and Spain

Mean age 4.74±0.44 years, 51.9% boys.

The prevalence of overweight (OW) and obesity (OB) was defined according to the IOTF BMI criteria (Cole et al., 2000).

Body weight, height and waist circumference (WC) were measured using standard procedures and medical equipment. BMI and waist-to-height ratio (WHTR) were calculated.

The prevalence of abdominal obesity (AO) – defined as WHTR values >0.5

A standardized questionnaire was used to collect information on obesity-related risk factors.

Participants

- Cross-sectional baseline study of 7576 children from six European countries - Belgium, Bulgaria, Germany, Greece, Poland and Spain
- Mean age 4.74±0.44 years, 51.9% boys.
- The prevalence of overweight (OW) and obesity (OB) was defined according to the IOTF BMI criteria (Cole et al., 2000).

Prevalence of overweight, total and abdominal obesity

Anthropometric indices correlated significantly with:
- the pre-gestational maternal weight (r_{BMI}=0.215, r_{WC}=-0.221, r_{WHTR}=0.147, p<0.01)
- maternal BMI (r_{BMI}=0.217, r_{WC}=-0.176, r_{WHTR}=0.153, p<0.01)
- the birthweight of the children (r_{BMI}=0.139, r_{WC}=0.147, p<0.05).

In the group of obese children we found:
- significantly higher parental BMI and pre-gestational maternal weight (p<0.001)
- significantly higher maternal weight gain during pregnancy (p=0.048)

Conclusion

- The estimated obesity prevalence among preschoolers in Europe is of concern highlighting the need to identify cost-effective strategies to decrease it.