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Letter to Editor **Open Access**

Are Rural South African Children Abdominally Obese?

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While available data exist on total body fat of rural South African children, as measured by body mass index, little is known concerning the abdominal obesity of rural South African children. The aim of this study was to determine the prevalence of abdominal obesity among rural South African children. Participants involved 1 172 rural black school children (541 boys and 631 girls) aged 10−16 years, residing in Mankweng and Toronto, both rural black settlements in Capricorn district, Limpopo province, South Africa. Height, weight and waist circumference were measured using standard techniques. Waist-to-height ratio (WHtR) was calculated. A WHtR ≤ 0.50 was used to determine abdominal obesity. Results were analysed using student t-test and Chi-squared statistics, with a p-value of < 0.05. Waist-to-height ratio showed inconsistent results in both sexes and across age groups, with no significant differences among boys and girls in all age groups. The proportion of boys with a WHtR ≥ 0.5 was 69 (12.8%), while girls were 92 (14.6%). The highest proportion of WHtR occurs at age 11 in boys, while this proportionality increases with age in girls, peaking at ages 14-16 years. Overall, 161 (13.7%) children had central obesity. This study indicates that abdominal obesity as measured by WHtR is prevalent among rural black South African children. The prevalence of WHtR ≥ 0.5 (13.7%) among the children is worrisome, as its signals the presence of obesity-related problems and the likely susceptibility of these sample children to future health risks. Therefore, interventions strategies are needed to reduce central obesity among children. Thus, the simple message: keep your waist circumference to less than your height, becomes imperative.

Childhood excess weight is a growing problem worldwide, and countries surrounding the Mediterranean sea show particularly high prevalence rates of overall childhood overweight (OW) and obesity (OB). Concerns arise when we look to the fact that, while in the US rates of obesity itself among children showed for the first time no significant changes between the last two national surveys (2003-2004 and 2005-2006), in many European countries these rates are still increasing, and are expected to reach 10% by 2010.

Greece, a recently modernized Mediterranean country, suffers from a paucity of nationwide data concerning the epidemiology of childhood obesity. Some old reports show that the prevalence of childhood OW is high, while others, more recent, show that OW prevalence in Greece does not differ from that of other southern European countries. However, available epidemiological data are scarce and mostly confined to specific geographical areas of the country. To our knowledge, the only representative survey on a national scale was conducted in 1990- 91 and reported an overall OW prevalence of 17.3% and obesity rates of 3.6% in children and adolescents aged 6-17 years. A recent review on epidemiology and predisposing factors of obesity in Greece showed a tendency for weight increase in children along the last 30 years.

Epidemiological studies have shown that waist circumference (WC) is a highly sensitive and specific measurement of central adiposity in children. Some countries have reported epidemiological data on the prevalence of abdominal fat distribution based on WC measurements. Besides WC, Waist-to-height ratio (WHtR) has been recently emerged as a valuable index for AO and high cardiovascular risk. This index does not require percentile tables and may be applied to both sexes of all ages. A WHtR>0.5 has been proposed to be able to identify both children and adults with the highest cardiometabolic risk. To the best of our knowldege, there are no reports on the prevalence of abdominal obesity by using the above indexes in Greek children throughout the whole country.

The aim of this large-scale, cross-sectional survey was to provide estimates of overweight, obesity and abdominal fat distribution in a sample of children throughout the whole of Greece.