Dietary patterns in a group of obese children

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INTRODUCTION

Obesity and overweight are important disturbances, considering their consequences, especially in children. Diet composition is an important factor involved in weight management.[1]

OBJECTIVE AND HYPOTHESIS

The aim of this study was to analyze the food pyramid and dietary patterns of obese children.

METHODS

An observational study was conducted targeting obese children from Romania. The study included 63 children, age 3-18, who presented to the endocrinology clinic from February 2013 to April 2014. Variables: age, sex, environment, food pyramid. Method: each legal representative filled a food frequency questionnaire with 126 items regarding the child's diet and each child had his height and weight measured using validated tools. A web-based nutritional assessment tool was used for FFQ analysis, which returned the food pyramid and diet composition analysis.

RESULTS

Sex ratio favored girls (1.36:1) and the mean age was 9.4 ±3.5 years. All the children were above the 99th percentile in BMI. The average food pyramid followed the recommended number of portions for cereals and fruits & vegetables, but for sweets, fat and meat the number of portions was above recommendations (Fig. 1). For our sample, boys eat more meat (p=0.02), but not the rest of the food groups (Fig. 2). There are only minor differences in dietary patterns of boys vs. girls (Table 1) (oranges as the most often fruit), but on a more detailed analysis, girls eat more vegetables than boys and healthier cereals. Children in rural areas tend to choose unhealthier foods (Table 2).

DISCUSSIONS

Although the nutritional evaluation is time consuming, with the aid of web-based applications it can be a useful tool in the management of pediatric obesity. Although dietary pattern analysis is not a new concept [2], it has emerged as an alternative and complementary approach to examining the relationship between diet and the risk of chronic diseases [3].
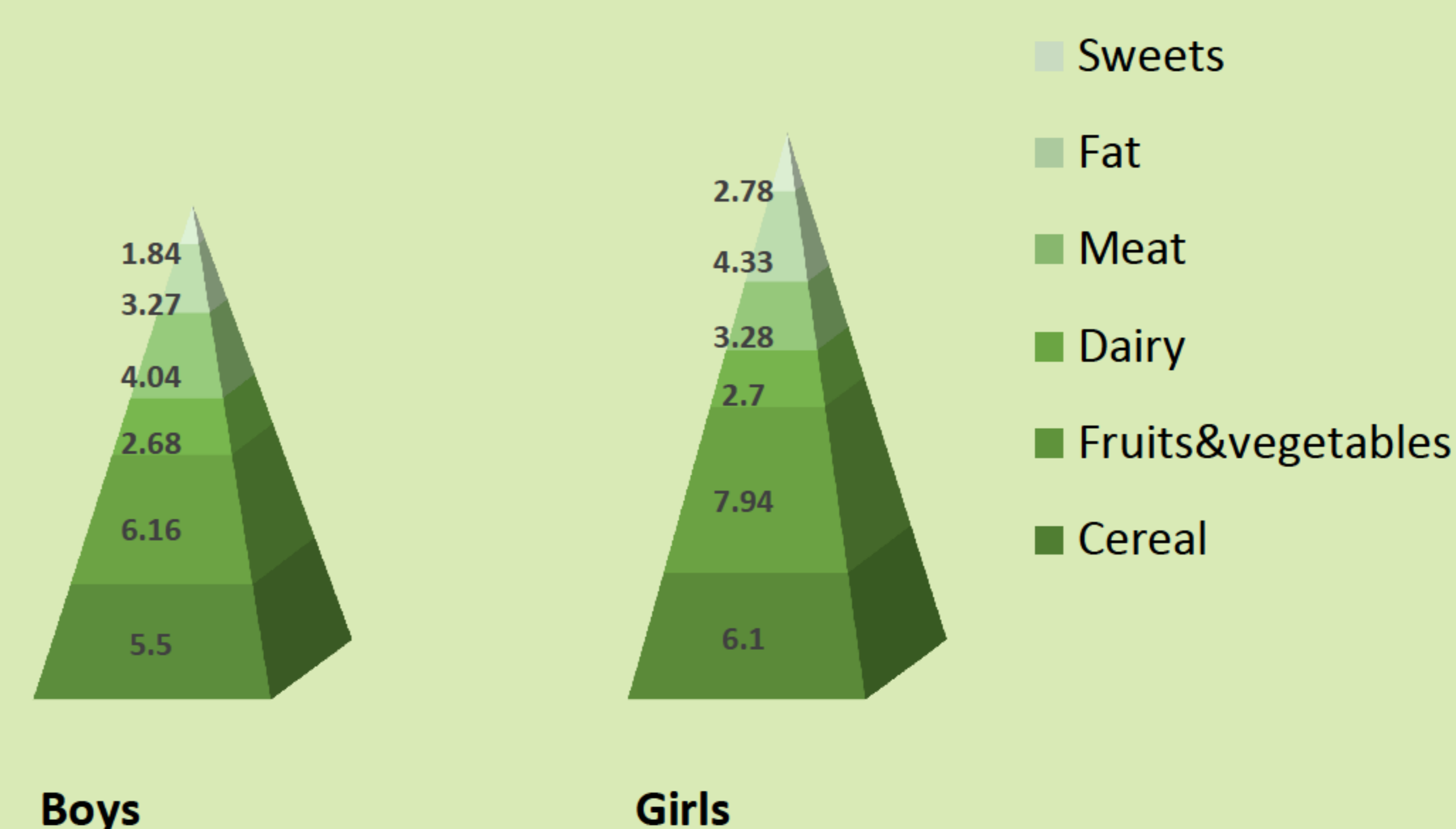

Figure 1 – The food pyramid of the subjects

Legend: Sweets, Fat, Meat, Dairy, Fruits&vegetables, Cereal

Sample: 2.39 / 3.89 / 2.5 / 1.55 / 7.21 / 5.85
Recommended: 1 / 2 / 2 / 3 / 5 / 6

Figure 2 – The food pyramid of boys vs. girls

Legend: Sweets, Fat, Meat, Dairy, Fruits&vegetables, Cereal

Boys: 1.84 / 3.27 / 4.04 / 2.68 / 6.16 / 5.5
Girls: 2.78 / 4.33 / 3.28 / 2.7 / 7.94 / 6.1

Table 1 – Diet composition of boys vs. girls

Food group	Girls	Boys
Cereal	1. white bread 2. whole-wheat bread 3. mashed potatoes	1. white bread 2. whole-wheat bread 3. cereals
Fruits & vegetables	1.oranges 2.apples 3.tomatoes	1. apples 2. oranges 3. bananas
Dairy	1. milk 2. yoghurt 3. ice cream	1. milk 2. yoghurt 3. processed cheese
Meat	1. salami 2. bacon 3. eggs	1. salami 2. eggs 3. bacon
Fat	1. sunflower oil 2. margarine 3. ice cream	1. margarine 2. butter 3. sunflower oil
Sweets	1. sugar 2. soft drinks 3. chocolate	1. sugar 2. candy 3. chocolate

Table 2 – Diet composition rural vs. urban

Food group	Rural	Urban
Cereal	1. white bread 2. crackers 3. polenta	1. white bread 2. whole-wheat bread 3. mashed potatoes
Fruits & vegetables	1. apples 2. oranges 3. tomatoes	1. oranges 2. apples 3. tomatoes
Dairy	1. milk 2. yoghurt 3. ice cream	1. milk 2. yoghurt 3. cheese
Meat	1. salami 2. eggs 3. bacon	1. salami 2. bacon 3. eggs
Fat	1. margarine 2. sunflower oil 3. butter	1. sunflower oil 2. margarine 3. butter
Sweets	1. sugar 2. soft drinks 3. coke	1. sugar 2. soft drinks 3. chocolate

CONCLUSIONS

Obese children eat too many portions of sweets, fat and meat, choose the unhealthy options from the cereal and eat fruits more likely than vegetables. Web-based nutritional assessment tools are an easy option for diet evaluation, even in small children

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