

NUTRITIONAL STATUS OF A GROUP OF ADOLESCENTS FROM A RURAL AREA OF BANAT REGION

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Abstract

In food science, the domain of biochemistry and human nutrition play an important role related to biomedical problems starting with infant period until senescence. The problems of under- and over-nutrition in adolescence and youth are important. Normally as a result of increases in growth rate and physical activity, adolescents have relatively high nutritional requirements. Some adolescents are vulnerable to excessive weight gain at this time. The prevalence of overweight and obesity is increasing, and obesity is now estimated to be the second leading cause of preventable death after cigarette smoking. For these reasons we initiated a study in a rural area of Banat region consisting in the determination of weight and height in a group of adolescents aged 10-15 years. The studied group included 145 boys and 191 girls. The obtained data revealed that more of the adolescents from the studied group are normal weighted.

Keywords: *adolescence, obesity, body mass index*

Introduction

This paper is dealing with nutritional problems in adolescence, underlying the importance of somatometric measurements (meaning the statural and ponderal status) estimation.

Adolescence is a transitional stage of development from child to adult. This time period is characterised by various changes in the body, along with developments in a person's psychology and academic career.

The increasing prevalence of obesity in children is cause for great concern. Most adolescents eating habit in this life period is unhealthy –

they prefer to eat high calorie junk food, to drink cola etc. and all these can increase the prevalence of obesity (Clarke, 1993; Must, 1999).

The aim the present study was to measure the height and weight of a group of adolescents in rural area and by calculating body mass index to detect the persons who present risk at overweight.

Experimental

The cross-sectional study was carried on a group of 336 healthy adolescents, aged 10-15 years. Anthropometric measurements, i.e. weight and height, were made at 191 girls and 145 boys according to a standardized protocols.

Having the somatometric data we calculated body mass index (BMI) - an anthropometric index which is defined as body weight in kilograms divided by height in meters squared.

$$\text{BMI} = \text{weight (kg)} / \text{height (m)}^2$$

BMI percentile for age and sex was the preferred measure for detecting overweight in children and adolescents because of its feasibility, reliability, and tracking with adult obesity measures.

Results and Discussions

In children and adolescents BMI is used to assess underweight, overweight, and risk for overweight. Children's body fatness changes over the years as they grow. Also, girls and boys differ in their body fatness as they mature. This is why BMI for children, also referred to as BMI-for-age, is gender and age specific. BMI-for-age is plotted on gender specific growth charts. These charts are used for children and teens 2–20 years of age and are indirect measure of body fatness (Dietz, 1998; Kuczmarski, 1998).

Data resulted from antropometric measurements of the adolescents were used to calculate BMI. Then after, according to the charts recommended by Center for Disease Control and Prevention, adolescents were classified as underweighted, normal weighted, at risk of overweight or over weighted.

Our results concerning boys aged 10-15 yrs, classified in four groups according the values of BMI are presented in table 1.

Table 1. Classification of boys according to BMI

Age (yrs)	Nr. of cases	BMI < 5th percentile	BMI 85th to < 95th percentile	BMI ≥ 95th percentile	BMI 5th percentile to < 85th percentile
10	15	0	1	2	12
11	23	2	3	3	15
12	29	3	3	0	23
13	35	4	3	0	28
14	30	4	1	1	24
15	13	2	2	0	9
Total	145	15 (10.3%)	13 (8.9%)	6 (4.1%)	111(76.6%)

Center for Disease Control and Prevention recommends the use of the BMI-for-age gender specific charts which contains a series of curved lines indicating specific percentiles. BMI-for-age < 5th percentile means underweight; BMI-for-age between 5th percentile to < 85th percentile means normal weight; BMI-for-age between 85th percentile to < 95th percentile – risk at overweight; BMI-for-age ≥ 95th percentile means overweight.

The obtained data for adolescent girls taking into account CDC recommendations are shown in Table 2.

Table 2. Classification of girls according to BMI

Age (yrs)	Nr. of cases	BMI < 5th percentile	BMI 85th to < 95th percentile	BMI ≥ 95th percentile	BMI 5th percentile to < 85th percentile
10	14	0	0	1	13
11	33	1	1	1	30
12	45	3	6	1	35
13	26	0	1	1	24
14	37	1	6	4	26
15	36	3	2	2	29
Total	191	8 (4.2%)	16 (8.4%)	10 (5.2%)	157 (82.2%)

It is important to measure and monitor growth over time in all children and adolescents as an indicator of health and development (Kuczmarski, 2002). Biochemical studies related to somatometric development may include also determinations on serum lipid fractions,

bioelements etc. (Lauer, 1997; Gârban, 2004; Aumüller, 2005). Childhood overweight is associated with a higher prevalence of intermediate metabolic consequences and risk factors for adverse health outcomes. For most overweight children the medical complications do not become clinically apparent for decades.

Conclusions

Most of adolescents from the studied group in the rural area are normal weighted : 76.6% in case of boys and 82.2% girls. Obesity was established mostly in adolescent girls (5.2%) than in boys (4.1%), and adolescents at risk of overweight were nearly at same percent in both gender. But, there are also underweighted adolescents, more boys (10.3%) than girls (4.2%).

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