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ALBANIA**ABSTRACT**

The development of adequate and individualized physical education and sports by the specialist teacher in this field, for all children and students including subjects with disabilities of ages 6-18 years, in the schools of Elbasan, influences directly in the reduction of obesity and body fat, formation of a healthy way of life and boosting cardiac-vascular-respiratory, physical, motor, psychological, cognitive, social and economic development of the youth and our society. Such a process of transformation, in fact, has been successfully implemented in the city of Elbasan, because physical education teachers have implemented the appropriate methodological procedure to reduce overweight and obesity and educate their students, with a healthy lifestyle. The teachers of all other fields nowadays recognize the important role of the physical education teachers and the social and health value of their mission.

Keywords: Physical education, obesity, teachers, health, children.

INTRODUCTION

The assessment of body mass index, BMI, as a result of the measurement of body weight and height to determine the range of "normal" body weight, with students of age 6-18 years in Elbasan, presents the best indicator of the body fat and risk of pathologies and this aspect represents the first study in this city, to the extent of testing.

LITERATURE REVIEW

Calculation of BMI

BMI is calculated as follows:

$$\text{BMI} = \text{Body weight (kg.)} : \text{Body height squared (m}^2\text{)}$$

The metabolic, structural and functional characteristics of the students also differentiate depending on their engagement in physical-motor activity, by operating through a suitable physical education and sport teaching program, according to age, gender, skills and motivation for each of them, we aimed to overthrow physical inactivity and obesity in schools of Elbasan, during the school season: September 2014 - October 2015.

The study aimed the measurement of body height, weight, waist circumference at the level of the umbilicus and the circumference at the level of hip, of the 6-18 years students of Elbasan.

These students were tested with their consent, without any imposition and during optimal climatic conditions. The data gathered was processed in accordance with Law 9887, dated 10.03.2008 "On the protection of personal data" as amended, Articles 66 and 67 of Law nr. 69/2012 dated 21.06.2012 "Lower education system in the Republic of Albania", and Instruction No. 12, dated 04.27.2015 "Collection, processing and protection of personal data of employees and students of lower educational institutions". During testing we noticed no metabolic disorders. Measurements were made separately for boys and girls and separately for the first grade, second grade and so on, until the 12th grade.

METHODOLOGY

All measurement, belong to October 2015 and the results were reported in the respective tables. These measurements were subjected to BMI's estimates and obesity, according to the respective formulas. The range in which the body mass index of a person is recorded, helps in determining whether the subject is on healthy weight.

The ranges are shown on Table no.1:

| Weight Condition | Body Mass Index |
|-------------------------|------------------------|
| Suffering from hunger | <15 |
| Underweight | <18.5 |
| Normal weight | 18.5-24.9 |
| Overweight | 25-29.9 |
| Obesity | 30-40 |
| Pathologic obesity | >40 |

Table no. 1

Identification and calculation, together with the corresponding graph, were worked in Microsoft Office Excel, through which we received the respective results. The second phase, regards measurements and comparisons between ages and sexes, in order to see the possible changes between them and also, through statistical analysis, they gave the changes in average value.

Through the method of analysis, not only we clarified the obtained data, but we also defined the BMI level of our subjects, giving us an accurate picture of the problem of obesity.

RESULTS

The measurements conducted on schoolchildren from age 6 to 18, were focused on four indicators. Body height, body weight, waist circumference on the hip level and above the navel. The measurements were conducted by physical education teachers according to a published protocol and learned together with the authors of this study. All the measurements of physical education teachers have been sent to the Education Directory of Elbasan. In addition, these data were sent to the study group, which made further statistical and comparative work.

The following tables provide the measurement of anthropometric indicators. The BMI value above 25, is considered overweight, while above 30, obese.

Number of students divided by age and sex

| Education Level | Girls | Boys | Total/Education |
|---------------------------|--------------|--------------|-----------------|
| Primary Education | 4841 | 5019 | 9860 |
| Lower Secondary Education | 4319 | 4689 | 9008 |
| Upper Secondary Education | 3580 | 2578 | 6518 |
| Total | 12740 | 12286 | 25026 |

Table no. 2

The number of students tested is 80% of the total students enrolled in the three education cycles; primary, lower secondary and upper education, in the city of Elbasan. While the number of boys and girls are approximately the same, in fact, 12740 girls and 12286 boys, which means that the difference is less than 0.1%. This difference is almost identical for the Primary Education (PE), Lower Secondary Education (LSE) and Upper Secondary Education (USE).

One of the major challenge of this study was to find the average student age, body weight and height, BMI and waist perimeter, for all three education cycles. These data are shows in Table no. 3.

Table no. 3

One of the main goals of our study was the calculation of students with normal body weight, overweight and obese. This calculation was done with the numbers and percentages of the measured students.

| Parameters | Subjects | Primary Education (6-11 years) | Lower Secondary Education (12-15 years) | Upper Secondary Education (16-18 years) |
|--------------------------|----------|--------------------------------|---|---|
| Age | Girls | 8.36 | 12.96 | 16.47 |
| | Boys | 8.48 | 13.08 | 16.56 |
| Body weight (kg) | Girls | 28.28 | 46.84 | 54.67 |
| | Boys | 29.26 | 48.28 | 64.85 |
| Body height (m) | Girls | 1.31 | 1.56 | 1.62 |
| | Boys | 1.33 | 1.65 | 1.74 |
| BMI (kg/m ²) | Girls | 16.2 | 19.1 | 20.8 |
| | Boys | 16.6 | 19.0 | 21.5 |
| Waist circumference (cm) | Girls | 56.98 | 68.47 | 71.64 |
| | Boys | 60.52 | 70.54 | 77.5 |

Table No. 4, represents the division and classification of the number of students, according to three categories of standardized body weight: the number of students with normal weight, overweight and obese.

| Education | Subjects | Normal | | Overweight | | Obese | |
|---------------------------|----------|-------------|--------------|------------|-------------|-----------|-------------|
| | | Number | % | Number | % | Number | % |
| Primary Education | Girls | 4791 | 98.96 | 43 | 0.88 | 7 | 1.59 |
| | Boys | 4930 | 98.22 | 63 | 1.25 | 26 | 0.51 |
| Girls + Boys | | 9721 | 98.59 | 106 | 1.07 | 33 | 0.33 |
| Lower Secondary Education | Girls | 4141 | 95.87 | 144 | 3.33 | 34 | 0.78 |
| | Boys | 4454 | 94.98 | 196 | 3.54 | 39 | 0.83 |
| Girls + Boys | | 8595 | 95.41 | 340 | 3.77 | 73 | 0.81 |
| Upper Secondary Education | Girls | 3311 | 92.48 | 229 | 6.39 | 40 | 1.11 |
| | Boys | 2283 | 88.55 | 252 | 9.77 | 43 | 1.66 |
| Girls + Boys | | 5594 | 90.84 | 481 | 7.81 | 83 | 1.34 |

Table no. 4

CONCLUSIONS

The data show that boys are in higher number, meaning higher percentage of overweight (18%), compared to the respective groups for girls, namely:

Primary Education: in all 4841 girls, were identified 50 girls with overweight to obese grouping; while all 5019 boys in the same cycle, were identified 89 boys with overweight to obese grouping.

Lower Secondary Education: from 4319 girls, were identified 178 girls with overweight to obese; while from a total of 4689 boys, 235 boys were identified overweight - obese.

Upper Secondary Education: from 3580 girls, were identified 269 girls with overweight - obese; while from a total of 2578 boys, 295 boys were identified overweight - obese.

The development of 3 hours per week of physical education curriculum in schools, by the expert teacher of this field, which is convenient and individualized for the students of 6-18 years old, enables the reduction of obesity and body fat, for all students who regularly attend classes.

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