

# STATISTICAL STUDY ON THE PHYSICAL DEFICIENCIES AT THE 9-10 YEAR PUPILS

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**Abstract:** *In the last period, there is an alarming rise in cases of physical deficiencies at the 9-10 year pupils, especially in the vicious attitude column and in obesity. In the present study we intend to do a statistical analysis of the situation of these deficiencies, among the pupils of the third and fourth class, from the 15th school of Brasov. The main methods of this study were to carrying out a somatic assessment, and a body mass index measurement using Tanita apparatus device, and performing a statistical analysis of the collected data. The results confirm the trend of these deficiencies, give us a configuration of their own by gender of pupils 9-10 years, and also confirm us the necessity to implement an attracting strategy for children to fight these one.*

**Key words:** *physical deficiencies, vicious attitude column, obesity, 9-10 year pupils.*

## 1. Introduction

Given today's changing society in which technologisation hamper the processes of growth and normal physical development, unfavourable changes occur on all body organs and systems, causing, among other alarming increase in overweight, obesity and posture deficiencies column spine at the level of school age children [6, p.36], [9], [11].

Inadequate nutrition, with a quantity in excess of food, and lack of exercise are major causes of overweight and obesity. This unsolved problem before or during the adolescence period, leads to worsening health, with a good chance of becoming obese adults, who involve many other collateral diseases [9], [11].

The posture deficiencies or the vicious attitude column, are imperfect maintaining correct posture, which are generated by

unbalances or asymmetries in maintaining the normal body position. [6, p.52].

The recovery of these deficiencies requires, first, restoring the body's physiological relation, based on normal relations between body segments [10, p.251-256], that is recommended to be carried out since at early ages, so they can avoid of the later complications [1], [7], [8].

Exercise remains one of the main factor of therapeutic measures at young age and later life, in terms of improving deficiencies, obesity, limitation of disability or promoting an independent life [5], [9].

Identifying obesity during childhood and the vicious attitudes of the spine column, allowing timely action in order to remove or correct them before maturation, i.e. their strengthening, which would ensure performing easily movements, increasing the school or professional efficiency or by

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extending the active life [3], [10], [11].

Most therapies recommend to promote an active lifestyle at pupils age, with a daily practice of light to moderate exercise for at least 30 min. Sports programs have as main objective decrease of excess of body weight and prevent degradation degenerative of the column spine [2, p. 2-4], [4], [9].

We would like to implement of an educational policy for attracting a large number of children and young people to physical activities, for long term [1], [2, p. 5-11]. We consider that is absolutely necessary a real image of the situation of 9-10 year pupils concerning these deficiencies.

## 2. Objective of the research

In this research we intend to do a statistical analysis of the obese and vicious attitude column, at the 9-10 year pupils.

## 3. Material and Methods

I used as main working methods the somatic assessment, in order to identify children with vicious attitude of the column, and measurement of the body mass index (BMI), in order to determine the number of obese children.

The somatic assessment was made by the method of observation and plumb, and was conducted by a sports physician specialist in the school medical office.

The BMI was measured with *Tanita*, a professional weighing scale, and body composition analyser's fig.1.



Fig.1. *Measuring apparatus of Body Mass Index "Tanita"*

## 3.1. Participants

The study subjects were composed of a total of 114 pupils, girls and boys of the third and fourth class, from the 15th school of Brasov.

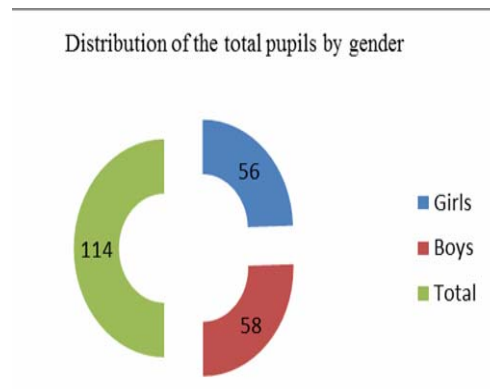


Fig.2. *Distribution of the pupils of 9-10 years by gender*

## 4. Results and Discussions

Our evaluation results are shown in Table. 1.

Table 1

*The evaluation results of 9-10 year pupils*

| Class        | Gender | Total      | Vicious attitude column | Obese     | Normals   |
|--------------|--------|------------|-------------------------|-----------|-----------|
| III A        | Girls  | 19         | 5                       | 4         | 10        |
|              | Boys   | 14         | 7                       | 4         | 3         |
| III B        | Girls  | 16         | 7                       | 3         | 6         |
|              | Boys   | 16         | 9                       | 3         | 4         |
| IV A         | Girls  | 12         | 1                       | 4         | 7         |
|              | Boys   | 15         | 7                       | 5         | 3         |
| IV B         | Girls  | 9          | 3                       | 3         | 3         |
|              | Boys   | 13         | 7                       | 1         | 5         |
| <b>Total</b> |        | <b>114</b> | <b>46</b>               | <b>27</b> | <b>41</b> |

We made some statistical analysis of the collected data. We wish to point out the real situation of the 9-10 year pupils with vicious attitude column and the obese own.

We can see, in figure 2, that from 114 pupils, 56 are girls and 58 are boys, an almost equal distribution in terms of gender, from the children evaluated in the four evaluated classes.

Figure 3 represented the percentage of cases with vicious attitude of the column, and those of the obesity.

As it can be seen, only 41 evaluated subjects, i.e. 36%, do not have any of these deficiencies, so a little more than half. The

children with vicious attitudes column are 5 more, namely 46, that represents a percentage of 40%.

Obese children are 27 in number, i.e. a rate of 24%, higher than national statistics.

Figure 4 shows us the class distribution from the evaluate pupils. The number of the obese people is roughly equal to the children without deficiencies, and one less those with vicious attitude.

In the other classes, overall proportion is kept, that children with vicious attitude column are more, after that comes the normal one and the obese at the bottom.

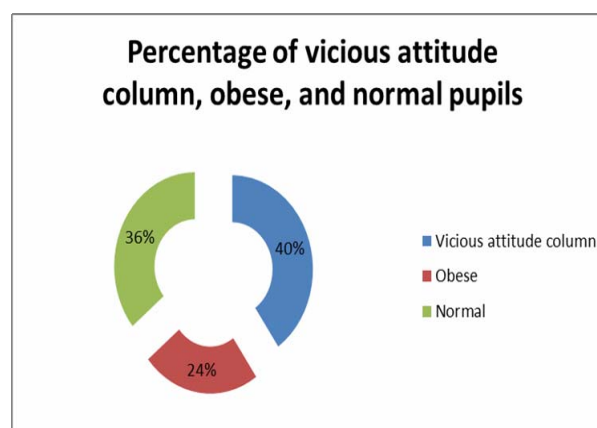


Fig. 3. *The percentage of the vicious attitude column, obese and normal pupils*

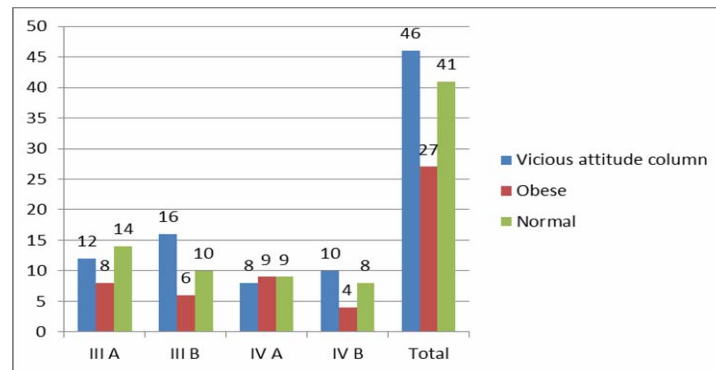


Fig. 4. *The results of the vicious attitude column, obese and normal pupils by class*

Regarding the sex distribution of pupils with vicious attitude column, we can see in Chart 5, that the number of boys is almost double than the girls, namely 30 to 16.

In the third class, is a whole difference of 2 people between boys and girls vicious attitudes column. In the fourth classes, the differences are more than double, i.e. the number of boys is 14 versus 4 the girls, namely 77 % boys versus 23% girls.

Gender distribution of obese pupils, figure 6, shows a different situation. The overall number of girls is higher than boys

only 1, so we can say that overall they are in roughly equal numbers, 14 girls and 13 boys.

In the third class, the number of the obese girls and boys are equal; the difference of one unit is made by the pupils from the fourth classes, in favour of girls, 7 girls and 6 boys.

What worries is the percentage of the obese pupils: 23.7% of 114 subjects measured, from the third and fourth class, namely 27 pupils.

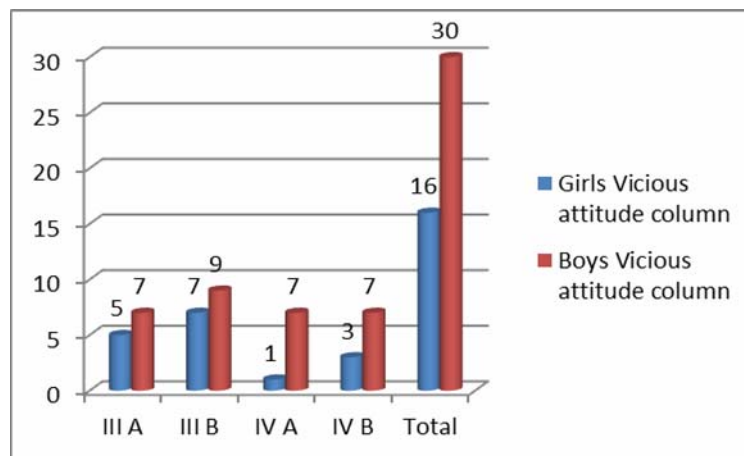


Fig. 5. *The results of the vicious attitude column by gender*

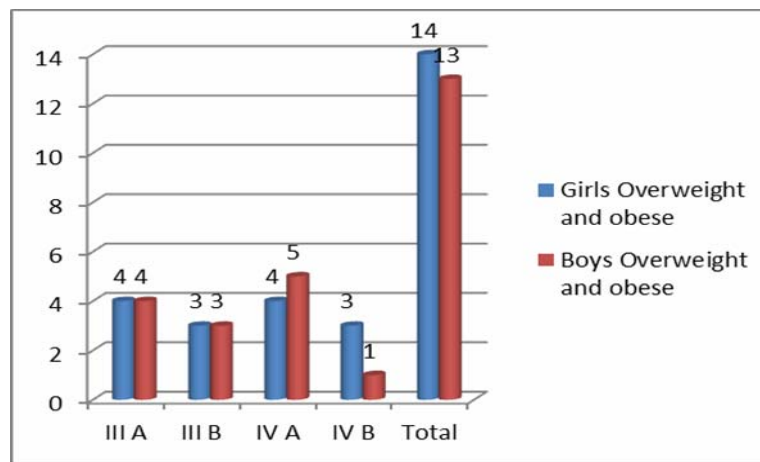


Fig. 6. *The results of the obese pupils by gender*

## 5. Conclusions

After conducting the statistical analysis of data obtained from the assessment made at school no. 15 of Brasov on a group of 114 pupils from third and fourth class, we conclude:

- there is an almost equal distribution in terms of gender, in the evaluated pupils;
- only 36% of the assessed pupils have not disabilities, about 40% from this one shows vicious attitudes column, and 24% are obese;
- between the Third and one of the Fourth classes, are the same proportion of the whole number of pupils with deficiencies. This one demonstrates us that there are no significant changes from 9 to 10 years in terms of number of physical deficiencies cases.
- it finds a large number of boys, nearly double, with vicious attitude column, compared to girls. This one may prove a less muscle strength development in the column of boys, or their higher tendency for incorrect posture while they are sitting in the bank, or the way of carrying the backpack;

- the number of the obese boys is almost equal to the girls; puberty is not yet installed, so in terms of body mass at this age there are not major differences between the gender;
- the total percentage of the obese pupils, 23.7% of the total of 114 measured pupils is really great.

## Recommendations

In order to decrease the number of students with physical deficiencies should apply educational policies of prevention programs at locally or centrally, [2, p.5-11], which will be involved both, boys and girls of school age.

We have to designing programs for correction the vicious attitudes column and for decrease the number of the obese pupils at 9-10 years.

Involvement majority of boys in the correction programs for vicious attitudes column and strengthening of back muscle.

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