

**STUDY ON OBESITY AND OVERWEIGHT
AMONG CHILDREN IN THE PRIMARY CYCLE AT NATIONAL
PLAN**

Cojocaru Daniela
High School with Sports Program Suceava

Keywords: study, obesity, overweight, children, physical activity, national

Abstract

Prevention of childhood obesity is a public health issue and requires close monitoring of those with a tendency to gain weight. Most researchers believe that obesity that has appeared since childhood and is maintained until adolescence is much more difficult to treat. Obesity among children inevitably decreases life expectancy. The problem of overweight and excessive growth of obesity since childhood it can be prevented or slowed down by implementing diversified programs if society focuses more on the causes. There are many causes, some more crucial than others, but through a balanced diet, combined with systematic physical activity, it can prevent obesity and overweight in all children around the world. [7] Next, I will present the studies done at the national level regarding the presence of obesity and overweight in children aged 6-19 years.

Introduction

"According to recent studies in Romania over 50% of the population is overweight and obese and due to the fact that the excess weight has spread around the globe suggests that the environment has changed in such a way that fewer and fewer people are able to maintain a healthy weight, relying only on their own biology and "instinctual" mechanisms to protect them. The most alarming is the increase in the spread of obesity among the child population. " [1] The environment encourages overeating through an abundant supply of high-fat foods, with a high energy density, easily accessible, relatively cheap, pleasant to taste and served in large proportions. Overweight and obesity have recently become a growing public health problem, if we look mainly at the figures in the studies regarding children. More and more people of all ages, especially children, have weight problems and are obese, having a very fast growth. In children, the risk of persistent obesity increases with age, regardless of how long they have been overweight / obese. The

calculation for the assessment of excess weight is performed by determining the body mass index ($BMI = G \text{ (kg)} / H \text{ (m}^2\text{)}$). In the case of children, the value of BMI is interpreted on the basis of nomograms, so that children with a BMI between 85 and 95 percentile are considered overweight, and those with a BMI > 95 percentile are obese. In Romania, several epidemiological and clinical studies on childhood obesity have been performed, especially in the western part of the country, but the prevalence of overweight and obesity in children is unknown and there are relatively few statistical and epidemiological data on the correlation between lifestyle and childhood obesity. Following a study conducted in 2012 by the World Health Organization (WHO), Romania ranks 3rd among obese children.

Material-method

In 1980, in Romania, according to a study conducted in the west of the country, on a group of 5,250 children aged between 3 months and 16 years, there was a prevalence of obesity of 14.7%, namely 18.6% among infants, 15% among preschoolers and a percentage of 14.2% among schoolchildren, with a higher predominance of females.

In the years 2005-2006 in Romania took place the first HBSC research (study that was published in a report of IASO, in London in 2009), in children aged 11-15 years, as a result of which it was demonstrated that the prevalence of overweight among girls was 14.7% and 8.7% among boys.

Following a study conducted by the Bucharest Institute of Public Health, it shows that the prevalence of non-endocrine obesity among fourth-grade children in 2001 it was 1.6%, and in 2008 it reached 3.6%, and in the 8th grade children it increased from 1.7% to 3.4%. A lower prevalence of obesity was registered among 12th grade students, where in 2001, it was 1.4%, and in 2008 of 2.8%.

Another study conducted in 2008, on a group of 7904 children from grades I-XII, from 20 different schools in Cluj - Napoca, showed a prevalence of overweight of 12.8%, and that of obesity of 8.2 %. The highest registration was made in the 6-10 age groups, both in the case of overweight (15.9%) and obesity (13.3%). The lowest share was registered among adolescents, of 7.6% in the case of overweight and 3.8% in the case of obesity. [2]

In 2009, in Oradea, a study conducted among adolescents, by DSP Bihor, shows a prevalence of overweight of 8% and obesity of 4.9%.

In the school year 2008-2009, the Department of School Hygiene within the Dolj Health Directorate, conducted a study on the degree of physical development among children in urban and rural areas, which highlighted an increased prevalence of non-endocrine obesity in 12th grade girls, both in urban areas (18.5%) and in rural areas (17.3%), and among the boys a share of 20.4%, of the 10th grade in urban areas and of 20.7%, of the 12th grade in rural areas. According to the data provided by the National Center for Evaluation and Promotion of Health in Romania (CNEPSS), the prevalence of the increase of overweight and obesity in children aged 3-16 years in 2004 increased in 2010 from 0.7% in rural areas and 1.6% in urban areas to 1.5% and 3.1%, respectively. According to a study conducted during 2007-2008 on a group of 3761 students (2050 girls and 1711 boys) in the city of Găești (Dâmbovița) aged between 6-19 years, there were 431 overweight (8%) and obese (3.4%) children out of the total number of children examined. Of the 127 obese children examined, 60% had major obesity according to age and sex. [4]

"In the period 2008-2010 following a study conducted in Craiova on a group of 803 children aged 2-14 years, of which 99 preschoolers (2-6 years) and 709 schoolchildren (6-14 years), there was a prevalence of overweight of 8.8% (21.2% of preschoolers and 7.1% of schoolchildren) and of obesity of 13.7% (24.2% of preschoolers and 12.2% of schoolchildren) . In the study group were chosen 205 children between 2-14 years (39 preschool children and 166 school children), of which 72 children were normal weight (15 preschoolers and 57 schoolchildren), where there was a prevalence of overweight of 6.7% and obesity of 9.8%. In preschoolers, especially in girls, overweight weighed 15.38%, compared to obesity (7.69%), $p < 0.05$. In contrast, among schoolchildren there were significant differences in terms of overweight between girls (15.66%) and boys (9.03%), and for obesity between girls (9.63%) and boys (31.32%).), $p < 0.05$, according to the table below.(Tabel 1)

| Category | Sex | Lot S | Lot O | Lot N |
|-----------------------------|------------------|-------------|-------------|-------------|
| Preschoolers (n = 39) | GIRLS (n= 18) | 6 (15,38%) | 3 (7,69%) | 9 (23,07%) |
| | BOYS (n=21) | 7 (17,94%) | 8 (20,51%) | 6 (15,38%) |
| Schoolchildren (n = 166) | GIRLS (n=75) | 26 (15,66%) | 16 (9,63%) | 33 (19,87%) |
| | BOYS (n=91) | 15 (9,03%) | 52 (31,32%) | 24 (14,45%) |

Table 1. Distribution of children by age group and sex

In the same study regarding school food consumption, a significantly increased consumption of sweets was found in 37% of overweight ($p = 0.01$), 32.9% of obese ($p = 0.05$) and fast food at 22.2% of overweight ($p = 0.01$) and 15.2% of obese ($p = 0.04$), compared to normal weight (22.2% and 9.7%, respectively). The schoolchildren 16.7% of overweight, 12.6% of obese and 6.9% of normal weight receive money from parents for the purchase of various foods (they often buy cookies, candy, wafers, chocolate) from shops near the school or on the way to school, as shown in the table below (Table 2):

| Food consumption at school | LOT S n(%) | LOT O n(%) | LOT N n(%) |
|----------------------------|--------------------------|--------------------------|---------------|
| Fruits | 8 (14,8%) | 11 (13,9%) | 20 (27,8%) |
| Sweets | 20 (37%) $p = 0,01$ | 26 (32,9%) $p < 0,05$ | 16 (22,2%) |
| Sandwich | 9 (16,7%) | 21 (26,6%) | 24 (33,3%) |
| Fast food | 12 (22,2%) $p = 0,01$ | 12 (15,2%) $p = 0,04$ | 7 (9,7%) |
| Nothing | 5 (9,3%) $p = 0,01$ | 9 (11,4%) $p = 0,03$ | 5 (7%) |

Table 2. Distribution of children according to food consumed at school

Regarding the practice of physical activities, it was found that 25.9% of overweight children and 36.7% of obese children, compared to 8.3% of normal weight do not participate in physical education and sports classes. (Table 3)

During physical activity, 38.8% of overweight children, 37.9% of obese children compared to 20% of normal weight children get tired during exercise. Overweight or obese children engaged in moderate or light physical activity in their free time, not being very physically demanding, compared to normal-weight children who developed more intense physiques or even practiced performance sports.

| Physical activities performed | Answer | LOT S n (%) | LOT O n (%) | LOT N n (%) |
|--|--------|------------------------|------------------------|----------------|
| During physical education and sports classes | Yes | 40 | 50 | 66 |
| | Not | 14 (25,9%) $p=0,01$ | 29 (36,7%) $p=0,02$ | 6 (8,3%) |

| | | | | |
|--|---------------------|-------------------|-------------------|------------|
| In free time | Yes | 20 | 28 | 56 |
| | Not | 34 (62,9%) | 51 (64,5%) | 16 (22,2%) |
| Duration of physical activity in free time per week | > 7 hours | 19 | 21 | 32 |
| | < 7 hours | 35 (64,8%) | 48 (60,7%) | 40 (55,5%) |

Table 3. Distribution of children according to participation in physical activities

Regarding the time spent in front of the TV more than 4 hours a day, there were significant differences in overweight children (20.3%, $p = 0.01$) and obese children (15.2%, $p = 0.05$), compared to normal-weight children (5.6%), and in terms of spending more than 4 hours in front of the computer or video games were recorded significant differences in overweight children (14.8%) and obese children (24.1%), compared to normal-weight children (2.8%), according to (Table 4). " [3]

| View | Time | LOTS n (%) | LOT O n (%) | LOT N n (%) |
|-----------------------------|-------------|------------------------------------|------------------------------------|--------------------|
| TV | < 2 hours | 13 (24,2%) | 23 (29,1%) | 19 (26,4%) |
| | 2-4 hours | 30 (55,5%) | 44 (55,7%) | 49 (68%) |
| | > 4 hours | 11 (20,3%) p=0,01 | 12 (15,2%) p=0,05 | 4 (5,6%) |
| Computer Video games | NU | 2 (3,7%) | 1 (1,2%) | 2 (2,8%) |
| | < 2 hours | 21 (38,9%) | 24 (30,4%) | 42 (58,3%) |
| | 2-4 hours | 23 (42,6%) | 35 (44,3%) | 26 (36,1%) |
| | > 4 hours | 8 (14,8%) | 19 (24,1%) | 2 (2,8%) |

Table 4. Comparative distribution of children according to time spent on TV / computer

Conclusions

The prevalence of increasing obesity among children is due to the cultural changes that accompany the development of society, as well as lack of physical activity and excessive food abuse. In recent decades, children have become less active, encouraged by advances in technology and socio-economic factors.

Researchers believe that the increasing prevalence of obesity is the result of changes in the lifestyle of societies, such as inactivity, balance of energy, high consumption of fast food, long time in front of the TV, computer as well as the increased use of new technology that captures all the attention. "Improper nutrition on children can have very serious consequences for their health, and obesity is the leading cause of a high-calorie diet resulting from excessive consumption of sweets, of fast food and by adopting a sedentary lifestyle, where physical activity is

absent. Overweight or obese children will become adults with weight problems and cardiovascular disease.” [5]

It is up to the family to obtain and implement a healthy lifestyle for the overweight or obese child. Awareness of unhealthy habits and the adoption of correct ones must be done gradually with patience by all family members. The overweight or obese child needs to be explained the healthy choices they need to make and at the same time they need to be helped and encouraged to put them into practice on a daily basis. Family support plays a fairly important role in the life of a child facing overweight or obesity, because if the family adopts a healthy lifestyle by choosing a healthy diet and exercising, the child in turn will adopt a lifestyle similar to the parents. [6]

Implementation at national level of diversified programs in schools since preschool to prevent growth surprisingly rapid overweight and obesity among children would be very beneficial in today's society.

References

- [1] **Popa I.** et al, 2001 - Childhood obesity and adipose tissue, Mirton Publishing House, Timisoara
- [2] **Văleanu C, Tătar S, Nanulescu M, Leucuta A, Ichim G.,** 2009 - Prevalence of obesity and overweight among school children in Cluj Napoca, Acta Endocrinologica, Vol. V, No.2
- [3] **Coșoveanu C., Bulucea D.,** 2011 - Childhood obesity - etiopathogenic, clinical and prophylactic aspects, Craiova
- [4] **Puha M. P., Mătășaru S.,** 2011 - Metabolic syndrome in childhood obesity, Revista Practica Medicală, Vol.VI, Nr.2 (22), Găești
- [5] **Graur M.,** 2006 - Guide to healthy eating, Performantica Publishing House, Iași
- [6] **SANOINOV.,** 2013 - Guide for the prevention of overweight and obesity in children, Government of Romania, Bucharest
- [7] **Veronica Mocanu,** 2015 - Prevention of childhood obesity - childhood obesity: a risk factor for health throughout life, Ed. Gr. T. Popa”, U.M.F. IASI