

Abstract

The topic of this diploma thesis is based on European study: *Childhood Obesity Surveillance Initiative (COSI)*. It is WHO Europe project. In the Czech Republic is this project lead by Institute of Endocrinology. The goal of this work is to determine childhood obesity prevalence and to monitor prevalence in relation to family and school environment. Obesity in children is an important health problem, accelerating throughout the world with particularly alarming trends in Europe. It causes a wide range of serious health and social consequences and increases the likelihood of morbidity in children and adults such as dyslipidaemia, hyperinsulinemia, hypertension, type 2 diabetes, early atherosclerosis etc. Obesity is also strongly associated with orthopaedic problems and mental disorders, therefore, it is very important to monitor obesity prevalence in childhood.

The goal of the work is to determine the prevalence of overweight and obesity in 7-year children in the year 2010 (WHO classification and classification method of Czech republic). Another goal is to find a relation of the anthropometric data to environmental factors - identified by parents of children and representatives of schools (socioeconomic characteristics, eating habits, physical activities etc.).

In this diploma thesis were measured 2594 selected children (6.5 – 7.5–years old) in cooperation with Czech pediatricians. Children antropometric measurement was performed (weight, height, waist circumference, hip circumference) and we collected informations from family and school environment by questionnaires (size of residence, region, socioeconomic characteristics of the family, eating habits and physical activity of the child, school environment). After completing of questionnaires the data were entered in database system (Microsoft Acces) and then the data were processed in Microsoft Excel and statistical analysed with Statgraphics, Simca P++ and NCSS program. We determined the prevalence of overweight and obesity in 7-year-old children in 2010 and compared the results with previous years. We found that the trend of increasing prevalence of overweight and obesity is probably slowing.

For 2010, the prevalence of overweight according to WHO classification methods is for 7-year-old boys 13.28%, obesity 9.11% and for 7-year-old girls 14.3% overweight and 7,06% obesity. According to the Czech classification methods was prevalence of overweight 6,45% for boys and 8,04% for girls. The prevalence of obesity for boys is 6.85% and for girls 6.92%.

Then we evaluated relations of the anthropometric data (BMI) to environmental factors - identified by parents of children and representatives of schools. From external factors is the most important predictor of obesity, incidence of obesity in the families and high birth weight. Also significant factor of childhood obesity is time spent watching television (in the week and on weekends) and sedentary activities (reading / learning / PC games). In addition, higher BMI values reach children who consume more low-fat milk, the type of fast food meals, snacks (chips, peanuts, etc.) and diet drinks. On the other side, children who drink high-fat milk, breakfast regularly and eat more vegetables, have a lower BMI values. Lower BMI also have children who were breastfed, the duration of breastfeeding is at age seven not significant. The same trend is also found in children who consume sweets (donuts, cakes etc.). The family data in our study show, that children in families with lower parental educational level, with fewer children, with incidence of hypertension and elevated cholesterol in the family are also have higher BMI. With increasing size of the place of residence, BMI decreases significantly. The school environment promotes obesity, when there is a schoolbistro, where children can freely buy. Positive impact on reducing BMI brings offered free milk, sugar-free drinks and access to school playground during school breaks. After Bonferoni's correction remained significant effect on BMI- incidence of obesity in the family, watching television (working days and weekend), regular breakfast, drink low-fat milk and level of parental education.

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Key words: childhood obesity, the prevalence of overweight and obesity, BMI, personal and family factors, school factors and obesity