Survey of obesity in child communities

Magdolna Bedő and Ágnes Bihari

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Obesity is one of the commonest nutritional disorders, which, among others, has an unfavourable influence on life expectancy. In case of many overweight adults in the civilized countries the roots of obesity go back to childhood. In a strict sense obesity should be defined as an increase either in the quantity of fatty tissues or in the fat content of the whole body. It is difficult to determine the total fat content either directly or indirectly and it is also ethically disputable. In everyday practice the degree of obesity is expressed in the percentual rate of overweight by taking height and weight standard data collected from similar ethnical groups. Generally speaking, one is considered to be obese with a 20 % overweight as compared to the standard (1).

In the USA 25-45 % of the adult population and 2-14 % of the child population are obese (2). In the GDR in the district of Görlitz 5999 young persons were examined, 3103 boys and 2896 girls between 16 and 20 years of age. Obesity rate was 14.5 % with boys and 28.3 % with girls (3). In New Zealand 17 % of girls and 10 % of boys were obese out of 334 children of school age. The authors state that this value exceeds the similar rates obtained in England by 20 % (4). According to Turkish authors a survey of 1530 boys and 1465 girls of 9-17 years showed an obesity rate of 11.2 % in boys and 9.4 % in girls in Istanbul. Separating the children of well-to-do families, this rate was found to be 16.5 % in boys and 14.6 % in girls (5).

Development of common childhood obesity can be attributed to many etiological factors, but an excess intake of food consumed either in absolute or in relative quantity due to some environmental and hereditary factors is decisive.

Many children grow fat as a result of nutritional habits of the family, thus the parents of the affected children are in most of the cases obese as well. The role of the mother's personality, psychic factors, a lack of physical activity, improper nutritional rhythm and many other factors are worth mentioning. It is well known from literature data that diabetes has a wide incidence in the families of obese children (7).

The aim of our study has been to survey the percentual rate of obesity and its distribution according to age groups in a large child population. Furthermore, we wish to reveal the relationship between the incidence of diabetes in the child's family and obesity.
Materials and methods

Our survey was carried out in the district of Monor (county Pest, 110,000 inhabitants). Data of 12,751 children belonging to the child communities (nursery school, primary school, secondary school) with 16,000 children were processed.

In the child population between 3 and 18 years of age our task was to establish the average height and weight data. The height of the children was taken and the weight was measured by using measuring tapes and bathroom scales. The children were barefooted and without upper clothes. The measurement was carried out by teachers, nursery school mistresses and district’s sanitary inspectors. Calculation of growth data was performed on the basis of Eiben’s method (8). The decimal age of the children was determined by using the anthropology formula: in children over 6 years of age: the completed year ± 6 months. In children under 6 years of age: completed year ± 3 months. The data obtained were grouped according to age and sex.

Obesity was determined by the use of the IW/AH index (ideal body weight per actual height (9,10). This index gives comparison of the excess of body weight with the height of the child. If it is over 120 %, it has to be considered pathological. The percentual evaluation was two-fold. Between 120 and 129 %, children were declared to be obese, although they can be considered only overweight until skinfold thickness is examined. Obesity can be declared at an index over 129 %.

The correlation between occurrence of diabetes in the family and obesity in children was examined. Questionnaires were sent to the parents to reveal the details of diabetic cases – if any – in the family (parents, grandparents, siblings).

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**Height of Boys**

- **MONOR** 1979
- **BR.** 1969

![Fig. 1. Height of boys.](image-url)