

The effect of social, family and physical activity factors on blood pressure and growth parameters of schoolchildren

Rimarova Kvetoslava, Dept. of Hygiene, Medical Faculty, Kosice, Slovakia

ECOHOST Centre, LSHTM, London, U.K

Koupilova Ilona, ECOHOST Centre, LSHTM, London, U.K

Bernasovska Kamila, Dept. of Hygiene, Medical Faculty Kosice, Slovakia

Background and introduction: The aim of the study is to study the possible effect of social, family, personal history and physical activity factors on systolic and diastolic blood pressure (SBP, DBP) and on growth parameters of schoolchildren.

Material and methods: The data from cross-sectional study of 761 schoolchildren (382 boys, 379 girls, age 6-14 years) were collected from the personal interview with parents and from the measurement of the schoolchildren. The questionnaires included data about social factors, income per capita, economic activity of parents, education, recall of birth weight and birth length, reported weight and height of parents, physical activity of children. The measurement of children included body weight, height, BMI, chest, waist and hip circumference. Fat percentage was evaluated from the 4 skin folds (triceps biceps, spina, scapula). Blood pressure was measured (in mmHg on manual sphyngomanometer with IVth Korotkov phase in diastola) as an average from 3 rest measurements. The statistical analysis calculated in STATA and SPSS and multilogistic regression and general linear model multivariate were used (B difference, p value).

Results: The predictors of blood pressure were calculated by regression adjusted for age and sex, the best predictor is body weight (R=0.381), then BMI (R=0.326) and height (R=0.319). The regression coefficients are higher for systolic BP then diastolic and higher in the group of boys rather then girls. Multilogistic regression of the effect of family and social factors showed very limited effect on blood pressure. Statistical significance for BP is accounted as sex, age and body weight adjusted difference B. For systolic blood pressure are statistically significant obesity of children (p<0.001) and mother's economic activity. Higher DBP have obese children, children with higher father's education, with employed mother and in compete families with comparison to incomplete.

Social, family and physical activity factors (adjusted for sex and age) which have statistically significant influence on growth (BMI, weight, height) of children are following: birth order, father's education, mother's education, birth length birth weight, BMI father and BMI mother, reported family history of obesity. Children in obese families (by BMI of mother, father and reported history of obesity) are higher, taller, with higher BMI and fat percentage. Longer free time physical activity and active sporting leads to lower fat percentage, but no changes in BMI. Any effect, neither for blood pressure nor for anthropometric values is resulting from T.V. watching and computer time, breastfeeding, smoking and father's economic activity.

Summary: The children's obesity is the most limiting factor for higher SBP and DBP. The children in higher educated more affluent and economic active families have mostly statistically significant higher body weight body height and BMI. Statistical significance of social, family, physical activity factors is lower for systolic and diastolic blood pressure.