Implication of the nutritional status at birth in the juvenile body development and mental ability

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Introduction

For the optimal care of neonates having exact information on its body development, surviving ability is necessary. The nutritional status is measured with the reference percentile values (generally the 3rd, 10th, 25th, 50th, 75th, 90th and 97th) of birth weight and birth length calculated at each week of the gestation duration. The 10th and the 90th reference percentile values (Battaglia, F. c., Lubchenco, L. O., 1967) have been increasingly accepted in the evaluation of body development, nutritional status of neonates. According to experiences nutrition of those having a birth weight less than the 10th percentile value is not appropriate for the gestational age (undernourished, retarded, **s**mall for **g**estational **a**ge /SGA/). Those having a nutritional status in the range between the 10th and 90th percentile values can be considered well nourished (**a**ppropriate for **g**estational **a**ge /AGA/). The rest are above the 90th percentile value. They are over-nourished (**l**arge for **g**estational **a**ge /LGA/).

Moreover the nutritional status at birth also influences the body development and mental capacity in the childhood. This relation is affected by the mother's educational attainment. The mother's educational attainment as an indicator is a vehicle of the cultural background including the health and hygienic knowledge, the level of the social integration and the power to enforce own interest.

In the present study the relationship between the 18-year-old men's natal nutritional status and educational attainment of the mother on the one hand and the body height, body mass, nutritional status, school GPA and the score of the Raven test (a test of understanding),

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Material and method

The research program titled „Survey of 18-year-old conscripts' body development, health status and social-demographic characteristics", (further on: 1998 conscripts' survey) was carried out on a nation-wide representative sample in 1998.

To evaluate the neonatal nutritional status the conscript's birth mass and gestation duration is compared to the national reference values (*Joubert K. 2000*).

In the analysis the following variables were used:

- The 10th and 90th percentile values of the national standard as the limits of the ranges of the intrauterine nutrition.
- The body mass of the conscripts.
- The conscript's gestation duration at birth.
- The conscript's nutritional status at birth.
- The conscript's understanding (the score of the Raven test) at the age of 18 years.
- The school GPA.
- The mother's educational attainment.

The hypothesis that there is a closed correlation between the intrauterine nutritional status and the biological status at the age of 18 years will be proved in the study.

Results

From the results of the 1998 conscripts' survey general conclusions valid for the whole age-group can be drawn.

Those who belonged to the SGA category at birth were the lowest, thinnest and their understanding and school GPA were the worst. Contrarily, the AGA babies' performance will be average at the age of 18 years and LGA neonates will be the tallest, best nourished and they will have the best understanding and school results.

The mother's educational attainment has an effect on the body development and the mental capacity of the child. Moreover the higher level of education or more precisely a complex set of factors represented by it can balance, at a substantial rate, adverse effects in the child's development, mostly in the mental capacity.

The survey results related to 18-year-old conscripts demonstrate that the nutritional status at birth and all the factors responsible for that are determining the survival chances. Moreover they have an influence on the body development, mental performance and understanding as long as the adulthood does not come though.