

SOME DEMOGRAPHIC VARIABLES AND BODY DEVELOPMENT INDICES IN RELATION TO CHILD BEHAVIOUR

K. JOUBERT¹, S. DARVAY², R. ÁGFALVI², J. GÁDOROS³ and S. RÓZSA⁴

¹*Demographic Research Institute of the Central Statistical Office, Budapest,*

²*National Institute of Child Health, Budapest,*

³*Vadaskert Clinic and Foundation for Emotionally Disturbed Children, Budapest,*

⁴*Department of Personality and Clinical Psychology, Eötvös Loránd University, Budapest, Hungary*

(Received: December 14, 1996)

Abstract

Data on 4412 children aged 11-14 included in the Child Behaviour Checklist (CBCL) (ACHENBACH, 1991) on the basis of the Hungarian Longitudinal Representative Growth Study according to the following aspects. Certain demographic characteristics relating to the parents and some major body development indices of the children were investigated according to the main aspects of the CBCL scale: internalization and its indices (withdrawn, anxious, depressed behaviour), externalization and its indices (deviance and aggressive behaviour).

The strongly significant difference between the means of the dependent variables could basically be ascribed to the differences in educational level between the groups of mothers. This result is a verification of the fact that the level of education is a very good index (measure) of the cultural and social level and of the standard of health knowledge. The strongly significant difference of the means of the dependent variables concerning the mother's dwelling-place and the normal and pathological groups of the CBCL scales observed may be basically ascribed to the differences between the groups of mothers' dwelling-places.

Key-words: Child Behaviour Checklist (CBCL), Hungarian Longitudinal Representative Growth Study.

Introduction

Regular studies on the body development, growth and health conditions of children are nowadays general in developed countries.

However, our knowledge on mental health, on the frequencies of mental problems occurring in childhood, on the morbidity of a child psychiatric status and the related epidemiology is relatively insufficient. This can be explained by the psychiatric disorders involved being multifactorial in origin, so that their investigation is much more complex and intricate. Much help is provided towards the elimination of this paucity by surveys on the behaviour and attitudes of children, conducted mainly by using questionnaires, generally filled out by the parents. These surveys help in the detection of psychiatric problems of various importance. If such data are supplemented

with information concerning the social, demographic, body development and morbidity status of the child and of the family; a background can be established for pinpointing the risk factors of the problems and behaviour.

Material and methods

The research results reported here are based on such a survey, and the associated behaviour and attitude study. The "National Longitudinal Child Growth Research" now being conducted under the professional direction of the authors started in 1979 under the title "Health and demographic study of pregnant and infants". The research program involved a national representative sample of 2 per cent, on the joint initiation of the Demographic Research Institute of the Hungarian Statistical Office, the Department of Population Statistics of the CSO, and the National Institute of Child Health. In the present study, 4412 parents described their children's emotional and behavioural problems according to the ACHENBACH'S Child Behaviour Checklist (CBCL), (ACHENBACH, 1991). The ages of the children ranged from 11 to 14 years. Mean = 12.74 years; SD = 0.93; 2131 were girls and 2281 were boys.

The children's emotional and behavioural problems were assessed by the Hungarian version of the widely-used CBCL, developed by ACHENBACH (ACHENBACH, 1991; GÁDOROS, 1996). The standardized rating scale of 114 items designed to obtain parents' reports of their children covered a wide range of problem behaviour, such as withdrawal, anxiety/depression, somatic complaints, social problems, thought problems, attention problems, delinquency and aggression, together with twenty competence items relating to the child's activities, social relations, involvement in social organizations, school performance and social competence. The total competence score is derived from the sum of the activity, social and school scales. Problem items are scored by parents on a 3-point scale (0 if the problem item does not hold for the child, 1 if the item is somewhat true or sometimes true, and 2 if it has been very true or often true in the preceding 6 months). Two broad-band groups of syndromes derived from the problem scales were designated "externalizing" or "internalizing". Externalizing problems reflect conflicts with other people and mainly concern aggressive and delinquent behaviour syndromes. Internalizing problems consist of the withdrawal, anxiety/depression and somatic complaints syndromes.

The variables included in the study were externalization and internalization, including the scales constituting them, the mother's educational level, the type of settlement of her habitation, her age, the child's body mass, body mass index (BMI), and head circumference at birth, and those at the age of 10 years.

The interrelations between the variables studied were analysed by two-way analysis of variance (ANOVA).

Results

The mother's educational level

Withdrawn behaviour scale - depending on the normal or pathological value, strongly significant differences were observed for boys between the mean head circumferences at birth and at the age of 10. ($p < 0.01$; in the following, the differences between means that are indicated to be statistically strongly significant are always at this level). For girls a strongly significant difference was also found between the means of the head circumference at birth and at 10 years of age.

Anxious/depressed behaviour scale - depending on the normal/pathological distribution, the difference was also strongly significant between the means of the head circumference at birth and at age 10, but, only for boys.

Somatic complaints scale - depending on normal and pathological grouping, the means of the head circumference at birth and at age 10 and also of the body mass at birth exhibited strongly significant differences for boys. In the case of girls, no statistically significant difference was found between the means.

Internalization (sum of the above three scales) - depending on the normal, or pathological values the head circumference means at birth (Fig. 1) and at age 10 displayed strongly significant differences, but only in the case of boys.

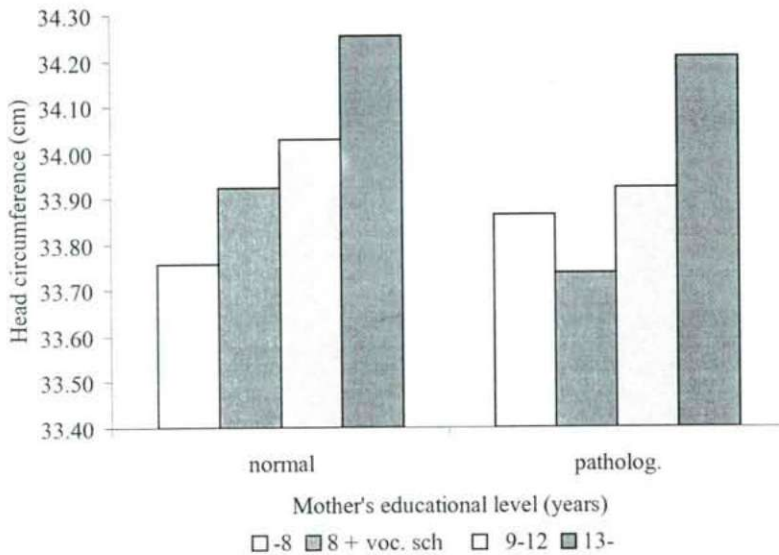


Fig. 1. Mean head circumference at birth as a function of the mother's educational level and the child's internalization (boys).

Delinquent behaviour scale - depending on the normal or pathological groups, between the means of the head circumference at age 10 were strongly significantly different for girls. The means of head circumference at birth and at age 10 and of the body mass at birth were all strongly significantly different for boys.

Aggression scale - depending on the normal or pathological distribution, strongly significant differences were observed between the means of the body mass at birth, and also the head circumference at birth and at age 10, but only in the case of boys.

Externalization scale (the sum of the previous two scales) - The normal and pathological groups of boys exhibited strongly significant differences in body mass at birth, and in head circumference at birth and at age 10 (Fig. 2), while for girls only the means of the head circumference at birth differed significantly.

The strongly significant differences between the means of the dependent variables can basically be ascribed to the differences in educational level between the groups of mothers. This verifies that the level of education is a good index (measure) of the

cultural and social level and of the standard of health knowledge (JOUBERT, 1982; EIBEN, 1989; GÁRDOS and JOUBERT, 1991).

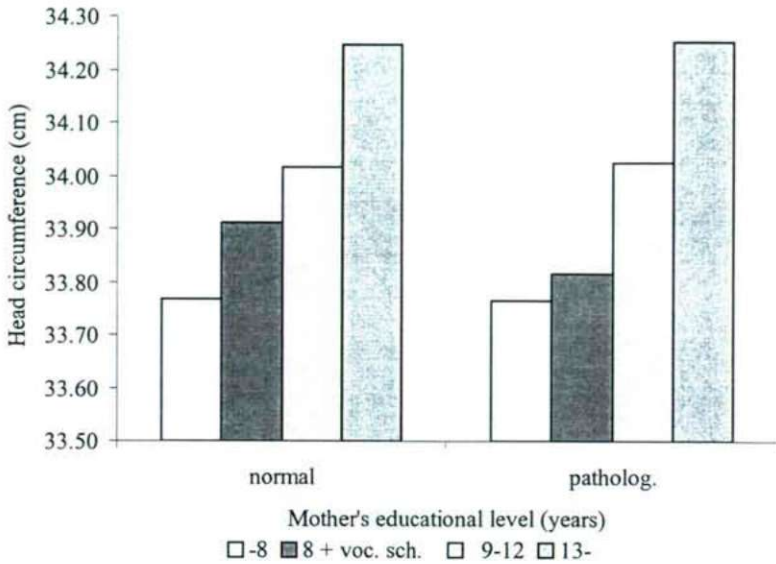


Fig. 2. Mean head circumference at birth as a function of the mother's educational level and the child's externalization (boys).

Dwelling-place of mothers

Somatic complaints scale - Only the mean head circumferences at age 10 of girls revealed strongly significant difference (Fig. 3). In this case, the difference between the means may be ascribed to the interaction between the two variables (Somatic complaints scale and the dwelling-place groups) by a common measure.

Internalization scale - Only the mean body mass of boys at age 10 yielded a strongly significant difference, which may be ascribed mainly to the interaction between the two variables (groups of Internalizing scale and of dwelling-place).

Aggression scale - Only the mean body mass index of boys at birth showed a strongly significant difference, which may be ascribed mainly to the differences between the dwelling-place categories, and to a smaller extent to the joint effect of the two variables.

Externalization scale - Only the mean body mass at birth of girls gave a strongly significant difference. Not in the way stated above, in this case the difference between normal and pathological groups explain the differences between the means.

The age of mother

Anxious/depressed behaviour scale - Only the mean body mass of girls at birth (Fig. 4) displayed a strongly significant difference.

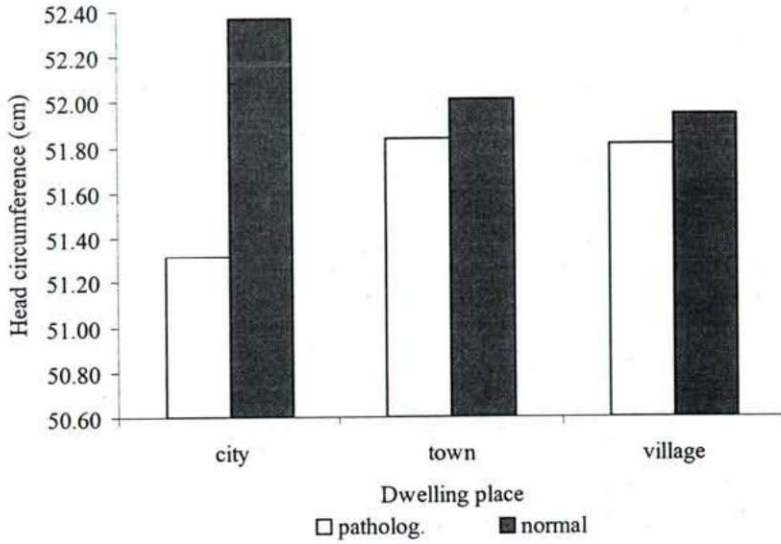


Fig. 3. Mean head circumference at the age of ten as a function of the dwelling-place of the mother and the child's Somatic complaints (girls).

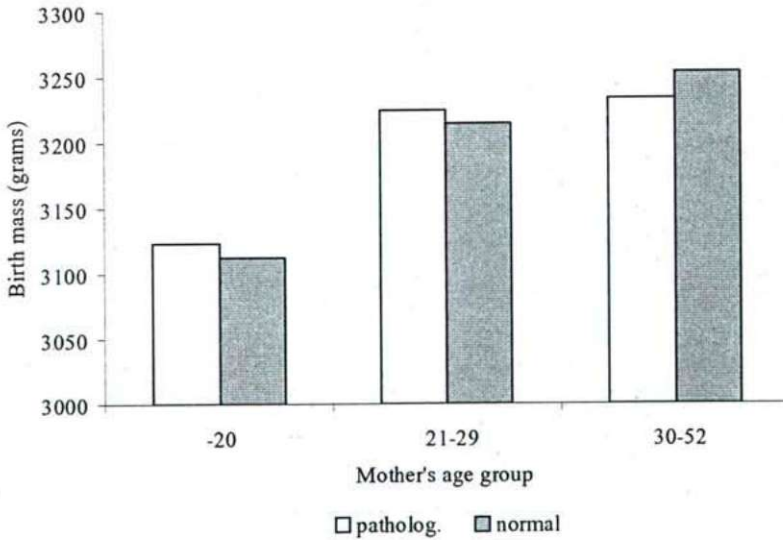


Fig. 4. Mean mass at birth as a function of the mother's age group and the child's Anxious/Depressed behaviour (girls).

Somatic complaints scale - Strongly significant differences were observed between mean body mass index of boys at birth, the mean head circumference of boys at birth, the mean body mass of girls at birth.

Internalization scale - Strongly significant differences were observed between the mean body mass of boys at birth, the mean body mass of girls at birth and the mean head circumference of girls at age 10.

Delinquent behaviour scale - Strongly significant differences for boys were found only in the mean head circumference at age 10. For girls, the mean body mass at birth and the mean body mass index at birth exhibited strongly significant differences.

Aggression scale - Only the mean body mass of girls at birth and the mean body mass index of girls at birth showed strongly significant differences.

Externalization scale - A strongly significant difference was found only in the case of mean body mass of girls at birth.

The strongly significant differences between the means of the dependent variables examined according to the mother's dwelling-place and the normal and pathological groups of the CBCL scales may be ascribed basically to the differences between the groups of mothers' dwelling-places.

The examination of the interrelations between the normal and pathological data on the CBCL scales and demographic variables and anthropometric data included in the analysis revealed certain relations, which demonstrates that it is worthwhile to continue this work in more detail, including further variables.

References

- ACHENBACH, T. M. (1991): Manual for the Child Behavior Checklist: 4-18 and 1991 Profile. - Burlington, VT, University of Vermont, Department of Psychiatry.
- EIBEN, O. G. (1989): Educational level of parents as a factor influencing growth and maturation. In: TANNER, J. M. (ed.): *Auxology '88. Perspectives in Science of Growth and Development*. - Smith-Gordon-Nishimura, London, Niigata-Shi, 227-234 pp.
- GÁDOROS, J. (1996): Szociodemográfiai rizikótényezők vizsgálata a Gyermekevéselési Kérdőív alkalmazásával. - *Psychiatria Hungarica* 11, 147-166.
- GÁRDOS, É. and JOUBERT, K. (1991): Newborn's development by sociodemographic factors in a representative survey. - *Anthrop. Közl.* 33, 54-64.
- JOUBERT, K. (1982): Distribution of the new-born with low birth-weight by some demographic characteristics on the basis of national data on live-births in 1975. - *Humanbiol. Budapestinensis* 12, 187-197.
- JOUBERT, K. and GÁRDOS, É. (1991): Terhesek és csecsemők egészségügyi és demográfiai vizsgálata. A kutatási program általános ismertetése (Health and demographic study of pregnant women and infants. General review of the research project). - *KSH Népegyetudományi Kutató Intézet Kutatási Jelentései* 40, 82 pp.