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BODY DEVELOPMENT, SCHOOL ACHIEVEMENT AND PARENTAL BACKGROUND OF UNIVERSITY STUDENTS IN HUNGARY

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Abstract: *The connection between body development and school achievement as well as of the effect of father's educational level on these was investigated in a sample (6951 male and 1381 female) of Hungarian university students. The results showed that the body development and the school achievement of the students was influenced by the educational level of the father.*

Key words: *University students; Body development; School achievement; Fathers' educational level.*

Introduction

It is well known that children and youth of the same society but of different socio-economic level differ in average stature at all ages, the children of the upper classes being the taller (Eveleth & Tanner 1976). The same phenomenon can be observed at neuropsychic characteristics, too, measured by IQ, by school achievement, or by any other methods (Schmidt–Kolmer 1965, Husén 1969, Hunt 1973, Westin–Lindgren 1979, Bodzsár 1991). The explanation of these differences between offsprings of different social classes may be simple: it is caused by the better conditions provided for the children in families of upper classes. However, the better conditions in the home are dependent not only on the economic circumstances (e.g. the father's occupation) but largely on the intelligence and education of the parents as well (Marshall 1977). Overwhelming majority of the studies investigating the connections between body development socio-economic status, and neuropsychic characterities have been concerned with children and youth up to 18. The aim of our study has been to extend this investigation to young adults, especially to university students.

Material and methods

In the Polyclinic of the Technical University Budapest regular screening tests were made till 1990 on the first and fifth year students to record the state of health and body development. This paper concerns only with first year students, who were measured between 1976-1985. More then ten thousand students were observed during this period but only the data of the largest age groups, the 20 year old male students (n=6951) and the 19 year old female students (n=1381) were analyzed here. For investigating the connection between school achievement and body development of the students the mean stature and the average score of the exams at the first semester were used. The parental background was measured by the educational level of the fathers.

Results and discussion

The data presented here refer to the height, school achievement and one socio-economic factor, the educational level of the father of the university students. Students born in Budapest and with fathers with high educational level are represented in a higher proportion in our sample than in the average population in Hungary (Table 1).

Table 1. Distribution of university students according to place of birth, educational level of the fathers and type of their secondary education

	Total sample	Place of birth		Educational level of fathers			Type of secondary education	
	n	Budapest %	Country %	Basic %	Middle %	High %	Grammar school %	Specialized school %
Males	6951	39.8	60.2	30.7	25.4	43.9	71.1	28.9
Females	1381	47.3	52.7	22.1	23.5	54.4	84.3	15.7

Table 2. Mean height (cm) of the university students according to birth place and educational level of the fathers

	Place of birth				Educational level of fathers					
	Budapest		Country		Basic		Middle		High	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Males	177.3	6.6	176.6	6.4	175.9	6.3	176.8	6.5	177.6	6.5
Females	165.1	5.9	164.2	6.0	163.6	6.1	164.4	5.9	165.3	5.6

This is characteristic for students of all universities and colleges in Hungary and it shows well that they are not random samples but selected ones with higher proportion of offsprings of intellectual families. Our data show that student born in Budapest (the largest town and capital of Hungary) are taller, than students born elsewhere and the tallest of them are those with fathers of high educational level (Table 2). A close connection between educational level of the fathers and school achievement of the students can be seen, too, because the highest scores of exams are achieved by those with fathers of high educational level (Tables 3 and 4).

The choice of secondary education is also positively connected with the socio-economic status of families in Hungary. The majority of families in lower social classes used for choose specialized secondary schools for their children, while families of higher social classes prefer grammar schools for their children. The differences in school achievement of students at the end of the first semester according to type of their secondary education also support the above findings (Table 5).

Our results show that both the body development and the school achievement of the Hungarian university students are mainly determined by socio-economic factors.

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Table 3. School achievement of the 20 year old male students at the end of the first semester according to educational level of their fathers

Educational level of the fathers	Average of marks*		School achievement Average of marks							
			from 2.00 to 2.99		from 3.00 to 3.99		from 4.00 to 5.00		Total	
	Mean	SD	n	%	n	%	n	%	n	%
General school	3.29	0.55	591	8.6	1229	17.9	283	4.1	2103	30.7
Secondary school	3.31	0.57	491	7.2	986	14.4	265	3.9	1742	25.4
College, university	3.38	0.60	768	11.2	1646	24.0	593	8.6	3007	43.9
Total	3.33	0.58	1850	27.0	3861	56.3	1141	16.7	6852	100.0

*5 = excellent –1 = unsatisfactory $Chi^2_{[4]} = 39.322$ $p < 0.001$

Table 4. School achievement of the 19 year old female students at the end of the first semester according to the educational level of their fathers

Educational level of the fathers	Average of marks*		School achievement Average of marks							
			from 2.00 to 2.99		from 3.00 to 3.99		from 4.00 to 5.00		Total	
	Mean	SD	n	%	n	%	n	%	n	%
General school	3.15	0.51	109	8.1	166	12.4	20	1.5	295	22.0
Secondary school	3.18	0.51	108	8.0	183	13.6	24	1.8	315	23.4
College, university	3.31	0.55.	200	14.9	434	32.3	100	7.4	734	54.6
Total	3.25	0.53	417	31.0	783	58.3	144	10.7	1344	100.0

*See Table 3. $Chi^2_{[4]} = 20.965$ $p < 0.001$

Table 5. School achievement of the students at the end of the first semester according to their secondary education

Students	Type of secondary education			
	Grammar school		Specialized school	
	Mean	SD	Mean	SD
Males	3.36	0.60	3.27	0.52
Females	3.27	0.54	3.11	0.48

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References

Bodzsár, B. É. (1991): *The Bakony growth study. – Humanbiologia Budapestinensis, 22.*

Eveleth, P. B.–Tanner, J. M. (1976): *Worldwide variation in human growth*, IBP. 8. – Cambridge University Press, Cambridge, London, New York, Melbourne.

Hunt, J. McV. (1973): Heredity, enviroment and class or ethnic differences. – *in: "Assesment in a pluralistic society"*. Proc. 1972 Inv. Conf. Testing Problems. Princetown. New Jersey, Educational Testing Service.

Husén, T. (1959): *Psychological twin research.* – Almquist and Wiksell, Stockholm.

Marshall, W. A. (1977): *Human growth and its disorders.* – Academic Press, London, New York, San Francisco.

Schmidt-Kolmer, E. (1965): Einfluss des sozialen Milieu, bzw. der Lebens- und Erziehungsbedingungen auf die "Altersbesonderheiten" der kindlichen Entwicklung. – *Ärtzliche Jugendkunde, 56* ; 412–428.

Westin-Lindgren, G. (1979): Physical and mental development in Swedish urban schoolchildren. *Studies in Education and Psychology, 5.* Stockholm Institute of Education, Department of Educational Research, Stockholm.

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