

CHANGES IN THE AGE AT MENARCHE OF SOUTHERN-HUNGARIAN GIRLS DEPENDING ON THE OCCUPATION OF THE PARENTS

by G. FARKAS

(Department of Anthropology, József Attila University, Szeged,
Hungary)

Abstract. The author surveyed data collected in Hungary between 1958 and 1978 on the dependence of the age at menarche of girls on the occupation of their parents (both father and mother). The analysis unequivocally proved the fact well-known from the literature that the age at menarche of daughters coming from families where the parents had higher (university- or academic) qualifications, ensued earlier than with girls from families in which the parents were less educated.

The observations are first of all of practical significance, when the time of sexual education at school is being determined.

The author stresses, besides, that valid data of this kind can only be expected from further studies to be conducted with these special objectives in view, as view, as the correct analysis of data is greatly hindered by the circumstance that checking takes rather a long time.

Key words: age at menarche, Southern-Hungary, occupation of the parents.

Introduction

The number of observations concerning the menarche of girls is very high on a world scale. In several countries this indicator of the pubescence of girls has been studied by the researchers in a wide variety of respects.

After surveying the international literature it turns out that these respects can essentially be classified into four groups. There are: (1) questions connected with social factors, (2) bodily endowments affecting the menarche, (3) the part played by natural factors in the formation of maturation, (4) the effect of other affecting factors on menarche.

Specifying the factors given in group (1), the following may be mentioned among the social effects: (a) the social situation of the individual, in wider sense his conditions in the community, (b) the size of the living space per capita, (c) the occupation and educational level of the breadwinner, generally of the parents, guardians, (d) the way of nutrition and the composition of the food, as factors connecting with the popular usage as well, (e) the number of brothers and sisters, and the order of birth of the girls in the family, as a factor affected by customs, demographical effects, (f) the social effect of the town- and village environment.

In the present report the author should like to deal with only a single one of the social factors in detail: the occupation of parents.

In the special literature the observations concerning the connection between the occupation of the parents and the data of menarche can be classified into two groups.

There are some authors who could not demonstrate any connection between the two factors, as e.g. BER—BROCINER (1964), ROBERTS—DANN (1967), ROBERTS—ROZNER—SWAN (1971), ROBERTS (1977).

On the other hand, another group of authors refer to the fact that, observed according to the occupation of the parents, the menarche median of girls may be of different character, their sexual maturity may follow earlier or later.

Thus ŁASKA-MIERZEJEWSKA (1968, 1970) and MILICER (1968) in Polish girls, RICHTER (1973) in German, BARIŠIĆ—GAVRILOVIĆ (1974) in Croatian, JONCE—GAVRILOVIĆ (1970, 1971—1972) in Macedonian, EIBEN (1968, 1972), BODZSÁR (1975) and FARKAS (in press) in the Hungarian ones found an earlier menarche in daughters of mothers and fathers respectively, of higher educational level.

At any rate, it is to be noticed that the data of the literature rather confine themselves to generalities in respect of occupation. The comparison of data is, therefore, not an easy task.

Material and Methods

Earlier first of all in the territory of Southern Hungary, the author collected data in a number of settlements with the status quo method concerning the age at menarche of the 10—18 years old girls. These have already been published (BOTTYÁN et al. 1963, FARKAS 1962, 1963, 1964, 1964a, 1969, 1970, 1971, 1975, 1978, FARKAS—VARGA 1973), or are in press at present (FARKAS's works in press). The author has evaluated these collections recently, taking into consideration the occupation of the mothers and fathers. When grouping the occupations — just on account of the above-mentioned reason — the author took as starting point also the nomenclature given by the Hungarian Central Statistical Office valid in Hungary at present (KSH, 1975). Accordingly, the author determined the following categories of occupation:

(1) *Physical workers*: those who have some trade, who do physical work as semi-skilled or unskilled workers or labourers, who have no secondary school qualification and who, at best, attended skilled workers' training school after being educated in primary (general) schools. According to the place of work, the author formed further three subgroups: (a) industrial physical workers, (b) agriculturer physical labourers, (c) other physical workers.

(2) The *intellectual* (white-collar) workers, classified into two subgroups on the basis of their education are the following: (a) intellectual workers, with university or academic qualification, (b) other intellectual workers, of middle-(secondary) school education.

(3) *Family members* working in the household: this group has been set up as to specify mothers.

(4) *Old-age pensioners*: in case of both parents, the author placed them into a separate category, — independently of the occupation they had earlier: parents who cannot be classified into the above-mentioned categories any more.

(5) Group 5 was set up for dead parents.

As in most cases the occupations did, of course, not agree regarding both parents, the author separated his sample according to the occupation of mothers and fathers, respectively.

At the evaluation, the number and relative frequency of the menstruating and not menstruating girls, classified into half-yearly age-groups was ascertained, and the latter values were converted, with the help of a table of conversion (WEBER 1961) into probit values. Eventually, in the material arranged in this way the median was determined on the basis of a new calculating operation introduced by the author in an earlier publication (FARKAS 1975), yielding the same result as that achieved with the graphic probit method.

The applied equations are as follows:

$$M_e = \frac{5 - a}{b} \quad \text{Eq.1.}$$

$$b = \frac{n \cdot \Sigma(x_i \cdot y_i) - \Sigma y_i \cdot \Sigma x_i}{n \cdot \Sigma x_i^2 - \Sigma x_i \cdot \Sigma x_i} \quad \text{Eq.2.}$$

$$a = \frac{\Sigma y_i - b \cdot \Sigma x_i}{n} \quad \text{Eq.3.}$$

where n = the number of the age-groups, x_i = age of life, y_i = empirical probit.

Results and Discussion

The distribution of the evaluated data of the investigations in Hungary per settlements is shown in Fig. 1, where also the dates of collecting them are indicated.

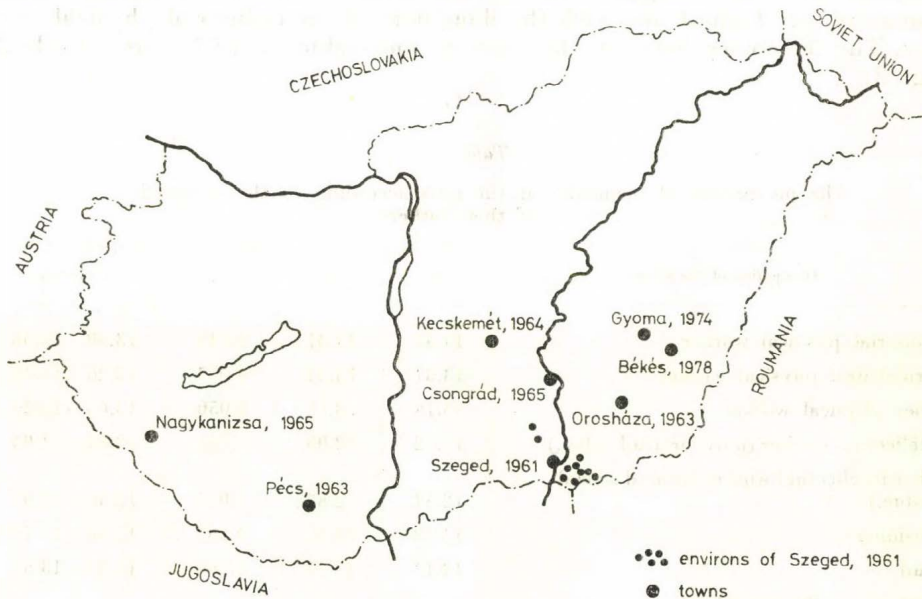


Fig. 1: Sites and dates of collection of the sample

In Table 1, the number of elements in the samples and the medians are given, broken down according to the occupation of the fathers and mothers. Of these it appears that on the basis of the occupation of fathers, the data of 6091, on that of mothers the data of 6145 girls were evaluated. For both parents, the medians obtained for the contracted sample are very similar (13.22, resp. 13.25 years). This also approaches very much the national median obtained in 1963 (13.23 years), and evaluated on the basis of 7008 data (BORYTYÁN et al., 1963).

Table 1

Values of the age at menarche of girls in Hungary, according to the occupation of the parents

Occupation of the parents	Father		Mother	
	n	m	n	m
All kinds of occupation, together	6091	13.22	6145	13.25
Industrial physical worker	1877	13.58	901	13.01
Agricultural physical worker	829	13.37	402	13.41
Other physical worker	1600	13.16	1098	13.29
Intellectual worker (of higher education)	757	12.92	164	12.81
Intellectual worker (of middleschool education)	764	12.54	858	12.94
Working in the household	—	—	2666	13.62
Pensioner	128	13.00	—	—
Dead	136	13.17	—	—

According to the occupation of the fathers, the lowest median (12.54 years) occurred with the daughters of the intellectual workers of middle-school education, the highest one with the daughters of the industrial physical workers. The difference between the extreme end-values is 1.04 years (Table 2, Fig. 2).

Table 2

The parameters of menarche of the girls according to the occupation of their fathers

Occupation of the father	m	\bar{x}	s_m	$m \pm 1.96 s_m$
Industrial physical worker	13.58	13.31	0.049	13.48—13.68
Agricultural physical worker	13.37	13.34	0.057	13.26—13.48
Other physical worker	13.16	13.15	0.050	13.06—13.26
Intellectual worker (univ. or acad. educ.)	12.92	12.98	0.059	12.81—13.04
Other intellectual worker (second.school educ.)	12.54	12.83	0.070	12.40—12.67
Pensioner	13.00	13.17	0.162	12.68—13.32
Dead	13.17	13.31	0.169	12.84—13.50
Working in the household	—	—	—	—

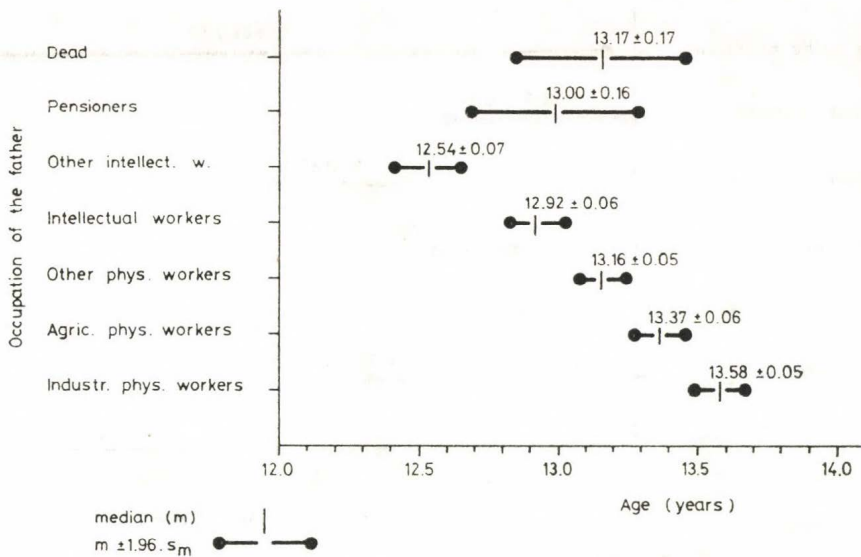


Fig. 2: The medians and confidence intervals of menarche of the girls according to the occupation of their fathers

Viewed from the angle of the occupation of the mothers, the daughters of the intellectual workers of higher education (university or academic) mature earliest, and the daughters of mothers working in the household the latest of all. The difference between the two extreme values is 0.81 years, smaller than when the fathers are considered (Table 3, Fig. 3).

On the basis of all these it can, therefore, be found that there is a difference between the age at menarche of girls according to the occupation of the parents. It seems that in a certain respect this is related with school education, although no data have been collected as to the latter. It is, however, particularly interest-

Table 3

The parameters of menarche of the girls according to the occupation of their mothers

Occupation of the mother	m	\bar{x}	s _m	m ± 1.95 s _m
Industrial physical worker	13.01	13.05	0.064	12.88—13.14
Agricultural physical worker	13.41	13.32	0.111	13.19—13.63
Other physical worker	13.29	13.34	0.030	13.23—13.35
Intellectual worker (univ. or acad. educ.)	12.81	12.83	0.155	12.51—13.11
Other intellectual worker (second. school educ.)	12.94	12.96	0.053	12.84—13.04
Pensioner	—	—	—	—
Dead	—	—	—	—
Working in the household	13.62	13.04	0.529	12.58—14.66

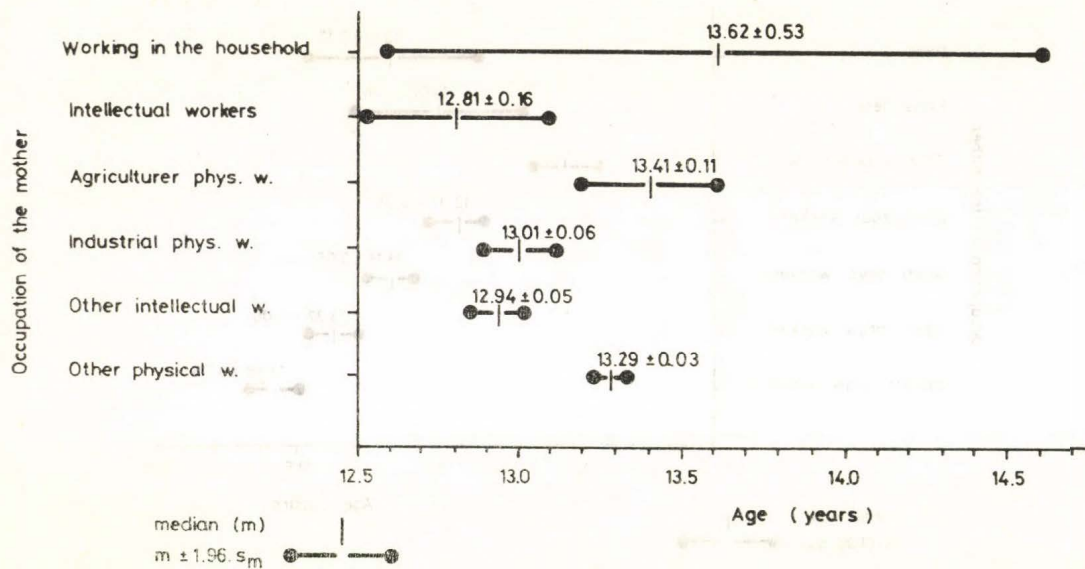


Fig. 3: The medians and confidence intervals of menarche of the girls according to the occupation of their mothers

ing to consider the role of the mothers working in the household in this respect because their daughters mature even later than those of the physical workers.

By what may these differences be brought about?

The effect of the education of the girls can in all probability not be considered primarily responsible for this. It is obvious, namely, that just the mothers working in the household can look after their daughters most, nonetheless, the median is lowest just in case of these, i.e. their daughters mature later. A significant part may be had here by the media of communication (wireless, television, books, daily papers) by their informative effects eliciting psychic stimuli.

It is a fact that also the formation of the average earnings and, generally, the standard of life have a part. This is, by the way, mentioned by many authors, even if not in so unambiguous a conception.

All these observations are of importance — independently of the explanation — in the sexual informative work at school.

In the long run, this is a fact to be taken into consideration even in respect of the transformation of the social structure, because the way of the future is directed towards achieving higher qualifications.

It seems that in the International Year of Children, when the problems connected with their development came into the foreground even more emphasis we ought to lay on these connections.

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Author's address: Dr. FARKAS GYULA
Dept. Anthropology, József Attila University
H-6701 Szeged, Táncsics u. 2.
Hungary

