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Causes of low birthweight in Hungary

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An analysis is offered of the factors contributing to the very high incidence of low birthweight infants in Hungary, based on data of the last three decades. The incidence increased by 30% from 1950 to 1974, and since 1974 there has been a reduction by 20%. The main factors of the high incidence are harmful habits (smoking, alcohol consumption, etc.) during pregnancy, the uneven level of antenatal care, the low level of education and health culture, and the frequency of induced abortion. Further improvement can only be expected from a planned influence on the above factors.

In spite of the fact that infant mortality rate in Hungary after a long period of stagnation has greatly decreased during the last eight years, from 30‰ to about 20‰, our perinatal and early infant mortality figures being far too high for a European country are still a great burden to the Hungarian health system (Table I). Experts are struck by the apparent contradiction between the well-organized child health system of the country and its excessive mortality figures. It is well-known that late infant and childhood mortality in Hungary is somewhat lower than the European average. A first approach to the data already reveals that the nearly exclusive cause of the high infant mortality rate is the high number of infants born with low birthweight; it has, however, to be admitted that better obstetric care and immediate neonatal treatment would also result in a decline of the mortality rate of newborns with normal birthweight. In case of low-birthweight infants even an optimum care system cannot fully prevent death as can be shown by comparing the Hungarian birthweight specific mortality figures to those obtained in Sweden [21, 6]. A favourable change in this respect could be expected primarily from a reduction of the incidence of low-birthweight births. This in turn necessitates an analysis of the factors leading to low-birthweight in Hungary.

Materials and Methods

Data used in this study have come from various sources. Demographic data concerning infant mortality rates and birthweight were supplied by the Central Statistical Office of Hungary. It should be noted that weight and length of the newborn are measured at the place of birth; measurements taken at home are obviously less reliable than those obtained in institu-

TABLE I

Birthweight specific infant mortality rates over the period 1954–1982

Year	Birthweight, g						
	–999	1000–1499	1500–1999	2000–2499	less than 2500	more than 2500	All
	Infant death per 1000 live-born of the same birthweight						
1954	921.0	786.5	455.4	138.3	315.9	41.5	60.7
1955	984.5	810.6	464.8	142.6	318.4	39.5	60.0
1956	962.7	831.1	455.6	143.7	311.1	37.6	58.8
1957	998.3	832.6	449.4	150.1	320.2	39.9	63.1
1958	(1000.0)	793.4	409.4	145.2	297.9	36.3	58.1
1959	963.9	760.4	398.7	125.1	285.1	30.0	52.4
1960	(1000.0)	757.6	322.5	107.8	257.3	26.4	47.6
1961	971.7	730.1	317.7	94.5	242.2	22.8	44.1
1962	(1000.0)	721.5	330.1	99.4	253.1	24.8	47.9
1963	(1000.0)	696.5	303.5	89.5	240.1	20.2	42.9
1964	(1000.0)	696.6	263.6	86.4	227.8	18.3	40.0
1965	997.4	661.9	277.8	72.6	232.5	15.8	38.8
1966	974.3	733.7	244.5	78.9	239.6	14.3	38.4
1967	981.6	764.3	244.3	64.8	234.1	13.1	37.0
1968	978.0	643.2	243.3	65.0	227.6	12.5	35.8
1969	962.6	681.0	251.9	69.0	227.6	12.3	35.7
1970	953.0	656.2	269.2	66.8	229.8	12.7	35.9
1971	961.0	647.2	281.2	62.9	228.9	11.1	35.1
1972	973.2	652.2	259.0	62.0	219.0	9.9	33.2
1973	934.0	622.0	239.3	58.8	211.0	10.5	33.8
1974	950.0	661.9	242.7	56.8	215.3	10.3	34.3
1975	952.1	655.5	263.3	67.7	214.9	9.9	32.8
1976	934.8	621.6	211.5	51.2	194.7	9.3	29.8
1977	945.9	552.1	175.7	49.8	175.2	8.5	26.2
1978	904.9	546.4	163.2	41.5	161.8	8.3	24.4
1979	925.8	504.9	152.5	44.6	154.7	8.5	24.0
1980	908.7	511.7	144.5	43.6	152.7	8.2	23.2
1981	860.3	478.7	126.4	37.8	133.7	8.0	20.8
1982*	878.9	454.0	140.0	38.0	133.8	7.5	20.0

* Preliminary data

tions. This bias has, however, been negligible in the last decades because delivery at home has become an exceptional event.

Antenatal care data were derived from the unified obstetric report system introduced in 1980.

Data concerning the relationship between maternal smoking and birthweight were taken from the study Health and Demography of Pregnant Women and Infants, performed by the Central Statistical Office, the Ministry of Health and the National Institute of Infant and Child Health. This study is still in process and the present data have been obtained from a preliminary evaluation of the entries of the first two study years.

Results and Discussion

Low birthweight infants are not a homogeneous group. According to data collected in Hungary, 37.25% of them are small for dates [21]. In this study, however, they were treated as a homogeneous group in order to avoid inaccuracy of sampling. In addition to factors known from Hungarian and international literature [1–9, 11–13, 15] like maternal size, age, gender of the infant, birth order, number of obstetrical events, harmful maternal habits, diseases of the mother and the fetus, multiple birth, toxic effects during pregnancy, some other factors were also investigated such as the effect of demographic changes on the incidence of low birthweight, certain parameters of pregnant care, educational level and profession of the mother, and the type of residence (village, town, capital).

(i) Maternal age, height and weight, gender of the newborn, race and birth order have been regarded by Miller [14] as intrinsic causes of low birthweight. The effect of these factors in our material was insignificant or differed in some peculiarities only from that observed in other countries.

The effect of maternal size on birthweight has been investigated by Tóth et al [23] and they found a significant connection only in the case of small-for-dates. This finding has been confirmed by our data collected on a national scale. The effect of the newborn's gender is negligible with low-birthweight infants, a sex difference can only be observed in babies with normal birthweight. The lower birthweight of the third or further babies is well-known. In Hungary, however, two-child families prevail, a higher birth order is characteristic of mothers with a low educational level in whom other unfavourable factors may also be at work. At variance with observations gathered in other countries [5] is that abortion in the history significantly reduces the average birthweight irrespective of the birth order (Table II). This is thought to be caused by the non-optimum technique of induced abortion used in Hungary. According to the aetiological classification of Miller [14] this category should be grouped as a medical complication together with abnormalities of the uterus, umbilicus and placenta. Another factor classified as a medical complication is maternal anaemia; its high incidence in Hungary has been emphasized by Peisz et al [17]. This effect could not be examined in our material since no national data are available concerning the incidence of maternal anaemia. This and other maternal diseases like

Table II

Birthweight (g) distribution of live-born babies according to birth order and quality of previous obstetric events

Number of pregnancies and their outcome	1978					All	1981					All
	–999	1000–1499	1500–1999	2000–2499	2500–X		–999	1000–1499	1500–1999	20002499	2500–X	
1st pregnancy												
No previous induced abortion	0.2	0.6	1.5	6.3	91.4	100.0	0.2	0.6	1.5	5.9	91.8	100.0
2nd pregnancy												
No previous induced abortion	0.2	0.5	1.2	4.4	93.7	100.0	0.2	0.5	1.0	4.3	94.0	100.0
Previous induced abortion	0.6	1.2	2.1	7.0	89.1	100.0	0.4	1.1	2.1	6.3	90.1	100.0
All	0.3	0.6	1.4	4.9	92.8	100.0	0.2	0.6	1.3	4.7	93.2	100.0
3rd pregnancy												
No previous induced abortion	0.3	0.5	1.8	5.9	91.5	100.0	0.2	0.8	1.9	6.7	90.4	100.0
Previous induced abortion	0.7	1.2	2.1	6.1	89.9	100.0	0.4	1.1	1.9	5.7	90.9	100.0
All	0.5	0.9	2.0	6.1	90.5	100.0	0.4	0.9	1.9	6.1	90.7	100.0
4th pregnancy												
No previous induced abortion	0.4	1.1	2.8	9.5	86.2	100.0	0.6	1.0	3.3	10.4	84.7	100.0
Previous induced abortion	1.1	1.7	3.1	7.5	86.6	100.0	0.8	1.5	3.0	7.5	87.2	100.0
All	1.0	1.6	3.0	7.9	86.5	100.0	0.7	1.4	3.1	8.2	86.6	100.0
5th pregnancy												
No previous induced abortion	1.2	1.8	3.1	10.8	83.1	100.0	0.8	1.0	4.5	10.4	83.3	100.0
Previous induced abortion	1.0	2.8	3.4	9.3	83.5	100.0	1.4	2.1	4.1	10.4	82.0	100.0
All	1.1	2.6	3.4	9.5	83.4	100.0	1.2	1.9	4.2	10.4	82.3	100.0
6th or higher rank pregnancy												
No previous induced abortion	0.5	1.5	3.9	12.4	81.7	100.0	0.2	2.2	4.3	13.7	79.6	100.0
Previous induced abortion	2.0	3.6	5.1	10.6	78.7	100.0	1.5	4.0	6.0	12.0	76.5	100.0
All	1.7	3.1	4.8	11.0	79.4	100.0	1.2	3.6	5.6	12.4	77.2	100.0
						100.0	0.4	1.0	2.2	6.6	89.8	100.0
Total	0.6	1.0	2.2	6.7	89.5							

hypertension, urinary tract and other infections, etc., may play an important role but reliable evaluation of these factors should be carried out on the basis of data furnished by high quality pregnant care. Malformations, genetic disorders manifesting during the newborn period, multiple pregnancy and intrauterine infection are also fetal factors leading to low birthweight [15] but it is improbable that they should play an important role since their incidence does not significantly differ in Hungary from that of other countries.

Among the extrinsic factors, harmful habits of the pregnant mother play an outstanding part. Smoking during pregnancy is wide-spread in Hungary and its relationship to low birthweight has unequivocally been confirmed (Table III). Its effect is most marked in the group weighing 1500–2500 g at birth, comprising 85 % of all low-birthweight newborns. Alcoholism is another important factor leading to low birthweight [8, 25]. In our material its effect could not exactly be established since it is nearly impossible to obtain reliable data on maternal drinking during pregnancy. Still, alcoholism being widespread in Hungary, it may be anticipated that it is an important factor. Another maternal factor is the age of the mother being below 20 and above 30 years. The participation of mothers younger than 20 years, however, has not increased; this unfavourable factor is now partly counteracted by the decreasing number of mothers older than 30 years.

(ii) A peculiar feature of the low-birthweight rate in Hungary is its timely course; this offers a unique possibility for factor analysis. The rate increased rapidly, by 3.4 % per annum, between 1950 and 1962. This was followed by a period (1963–1974) characterized by a slower rate of increase, 1.3 % per annum, and since 1974 the figure has decreased by 1.1 % every year. A remarkable finding is that in the early 50-es, when 40–50 % of all deliveries took place at home, the incidence of low birthweight was as low as 3–4 % for the babies born at home while the figure

TABLE III

Birthweight (g) distribution of live-born infants by smoking habit of the mother*

Degree of maternal smoking	–999	1000–1499	1500–1999	2000–2499	less than 2500	more than 2500	All
No smoking	0.7	0.5	1.3	4.0	6.5	93.5	100.0
Slight	0.6	1.5	3.9	7.9	13.9	86.1	100.0
Moderate and heavy	1.7	2.3	5.6	11.9	21.5	78.5	100.0
All	0.7	0.8	2.1	5.2	8.8	91.2	100.0

* These data have been obtained from the study, Health and Demography of Pregnant Women and Infants

TABLE IV

Incidence of birthweight less than 2500 g according to place of birth

Year	Place of birth		All	Percentage of birth taking place in institution
	Institution	Other		
1950	9.6	4.0	6.0	34.3
1951	9.9	3.7	6.3	41.4
1952	9.6	3.4	6.5	49.6
1953	9.7	3.8	7.3	60.4
1954	9.1	3.5	7.0	62.6
1955	9.2	3.9	7.3	65.1
1956	9.5	4.2	7.7	67.0
1957	9.8	4.7	8.3	69.2
1958	9.5	4.7	8.3	75.7
1959	9.6	5.3	8.8	80.3
1960	9.8	5.8	9.2	85.0
1961	10.0	7.1	9.7	89.7
1962	10.3	8.2	10.1	92.5
1963	10.4	10.0	10.3	94.6
1964	10.3	12.2	10.3	95.8
1965	10.5	13.8	10.6	96.6
1966	10.5	14.9	10.7	97.2
1967	10.6	18.4	10.8	97.5
1968	10.6	17.8	10.8	97.8
1969	10.7	18.6	10.9	97.9
1970	10.5	19.3	10.7	98.2
1971	10.9	21.5	11.0	98.2
1972	10.9	24.4	11.1	98.5
1973	11.5	24.8	11.6	98.8
1974	11.5	27.1	11.7	98.9
1975	11.0	27.5	11.2	99.1
1976	10.9	28.4	11.0	99.1
1977	10.5	27.9	10.6	99.2
1978	10.3	28.4	10.5	99.2
1979	10.4	27.6	10.6	99.2
1980	10.2	31.4	10.4	99.1
1981	10.0	32.8	10.2	99.3

was 9–10% for institution deliveries (Table IV). Quite obviously, this may be explained by the inaccuracy of measurements at home and the concentration in institutions of pathological births, premature deliveries included. This, however, cannot be the whole explanation and a real increase

TABLE V

Time of first antenatal care visit of mothers giving birth to live-born infants by birthweight, 1981

Birthweight, g	No antenatal care visit	Attended antenatal care						Total
		Gestational age at time of first visit, weeks					All	
		–8	9–12	13–16	17–20	21–		
— 999	1.6	0.5	0.3	0.4	0.5	0.3	0.4	0.4
1000–1499	3.2	0.9	0.8	0.9	1.4	1.4	1.0	1.0
1500–1999	5.8	1.9	1.8	2.1	3.0	3.8	2.0	2.2
2000–2499	12.3	6.1	5.9	6.6	8.4	11.5	6.4	6.6
— 2500	22.9	9.4	8.8	10.0	13.3	17.0	9.8	10.2
2500–X	77.1	90.6	91.2	90.0	86.7	83.0	90.2	89.8
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

over the years must be accepted since the increase in the incidence of low-birthweight deliveries continued to increase after 1960 when more than 90% of all deliveries occurred in obstetric departments. In the fifties a demographic wave was witnessed; for this the higher number of older mothers and higher birth order cannot be the only explanation since the increase in incidence of low birthweight did not stop at the end of this period but its value continued to grow up to 1974. We feel that urbanisation, together with propagation of industrial production methods in agriculture and the increasing use of pesticides, paralleled by a sharp increase of female employment contributed much to the increase in low-birthweight incidence. Statistical data point to a significant role of the excessive number of induced abortion in the high incidence of low birth-

TABLE VI

Number of antenatal care visits and birthweight, 1981

Birthweight, g	No antenatal care visit	Number of attended antenatal care visits				All	Total
		1–5	6–10	11–15	16+		
— 999	1.7	1.8	0.3	0.1	0.1	0.4	0.5
1000–1499	3.3	3.8	0.9	0.4	0.2	1.1	1.1
1500–1999	6.0	5.5	2,0	1.1	0.6	2.2	2.3
2000–2499	12.1	11.0	6.4	4.8	4.1	6.5	6.7
— 2500	23.1	22.1	9.6	6.4	5.0	10.2	10.6
2500–X	76.9	77.9	90.4	93.6	95.0	89.8	89.4
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE VII

Need for special care during pregnancy and birthweight, 1981

Birthweight, g	Needed no extra care	Needing special care because of complication or disease			All	Total
		of pregnancy	independent of pregnancy	other reasons		
— 999	0.4	0.7	0.3	0.3	0.7	0.5
1000–1499	0.9	2.0	1.3	2.3	2.0	1.1
1500–1999	1.7	3.9	1.8	3.4	3.9	2.3
2000–2499	5,6	9.6	7,6	12.1	9.6	6.7
— 2500	8.6	16.2	11.0	18.1	16.2	10.6
2500–X	91.4	83.8	89.0	81.9	83.8	89.4
All	100.0	100.0	100.0	100.0	100.0	100.0

weight seen after 1956. Table II demonstrates how sharply the probability of low birthweight increases with an increasing number of induced abortions in the mother's history. Conversely, since 1974 the rate of low birthweight has decreased and this coincides with a significant reduction in the number of induced abortions, a phenomenon caused by the spread of up-to-date anticonci-pients. Another factor in this decrease in the incidence of low birthweight is a demographic phenomenon reflected in the decreasing share of families with three children or more.

TABLE VIII

Incidence of birthweight less than 2500 g by the mother's educational level

Year	Number of school classes completed by the mother							All
	0	1–3	4–5	6–7	8	9–12	13 or more	
1972	25.2	21.1	18.5	14.5	10.9	8.4	7.4	11.1
1973	25.7	23.3	19.8	16.1	11.5	8.8	7.9	11.6
1974	26.6	25.5	19.7	16.9	11.8	8.8	7.5	11.7
1975	28.5	22.3	21.0	17.0	11.3	8.4	7.3	11.2
1976	29.7	23.5	22.0	18.3	11.3	8.4	6.9	11.0
1977	27.4	26.0	22.8	17.7	11.0	7.8	6.8	10.6
1978	28.4	24.4	21.8	19.6	10.9	7.8	6.6	10.5
1979	28.4	28.1	22.3	20.2	11.2	7.6	6.4	10.6
1980	29.3	25.2	23.8	20.4	11.1	7.4	6.6	10.4
1981	28.5	28.8	24.6	21.8	11.0	7.4	6.2	10.2

This in turn leads to less third and higher rank children, and to a reduction in mean maternal age at birth. This process has come to end. The favourable change in the incidence of low birthweight is partly due to improved pregnant care, to achievements in social politics and to health education including spread of knowledge about the damaging effect of noxious habits during pregnancy.

The effect of genetic counselling has not yet attained a satisfactory level but the increasing interest in it and the planned introduction of screening during pregnancy for neural tube defects are promising.

Finally, we shall discuss the role of three factors contributing to the high incidence of low birthweight in Hungary. Elimination or improvement of any of them would have a marked affect.

TABLE IX

Maternal profession and birthweight, 1981

Profession	Birthweight			Birthweight		
	–2499 g	2500– g	All	–2499 g	2500– g	All
	No-s			%		
Iron industry, metallurgy, machine industry	343	2 788	3 131	11.0	89.0	100,0
Mechanician, electrician	409	3 558	3 967	10.3	89.7	100.0
Building material industry	95	792	887	10.7	89.3	100,0
Chemical industry	129	1 069	1 198	10.8	89.2	100.0
Wood and paper industry	122	914	1 036	11.8	88.2	100.0
Printing industry	64	760	824	7.8	92.2	100.0
Textile industry	529	5 303	5 832	9.1	90.9	100.0
Leather and shoe industry	295	2 583	2 878	10.3	89.7	100.0
Dressmaking industry	637	6 871	7 508	8.5	91.5	100.0
Food industry	221	1 827	2 048	10.8	89.2	100.0
Building industry	69	375	444	15.5	84.5	100.0
Plant cultivation	338	2 383	2 721	12.4	87.6	100.0
Animal husbandry	189	1 253	1 442	13.1	86.9	100.0
Other agricultural physical work	52	308	360	14.4	85.6	100,0
Transport and telecommunication	93	582	675	13.8	86.2	100.0
Shopgirl, cashier, public catering	1 084	11 747	12 831	8.4	91.6	100.0
Personal and communal service	172	1 996	2 168	7.9	92.1	100,0
Storing and manipulation	576	4 051	4 627	12.4	87.6	100.0
Material handler	132	816	948	13.9	86.1	100.0
Cleaner, office servant	607	3 042	3 649	16.6	83.4	100.0
Unskilled worker	677	3 777	4 454	15.2	84.8	100.0
Other	486	4 729	5 215	9.3	90.7	100.0
Physical workers	7 319	61 524	68 843	10.6	89.4	100.0
Intellectual workers	4 234	53 711	57 945	7.3	92.7	100.0
All earning mothers	11 553	115 235	126 788	9.1	90.9	100.0

TABLE X

Incidence of birthweight less than 2500 g and type of maternal residence

Year	Budapest	Province	Province		All
			Towns	Villages	
1950	9.7	5.4	..	..	6.0
1951	10.4	5.6	..	..	6.3
1952	10.2	5.8	..	..	6.5
1953	10.4	6.7	..	..	7.3
1954	10.1	6.4	..	..	7.0
1955	9.6	7.0	..	..	7.3
1956	10.4	7.4	..	..	7.7
1957	10.8	8.0	..	..	8.3
1958	10.3	8.1	..	..	8.3
1959	10.8	8.5	9.3	8.3	8.8
1960	11.4	8.9	9.4	8.8	9.2
1961	11.4	9.5	9.8	9.3	9.7
1962	12.3	9.8	10.3	9.7	10.1
1963	12 4	10.0	10.5	9.9	10.3
1964	12.1	10.1	10.8	9.8	10.3
1965	12.4	10.3	10.5	10.3	10.6
1966	12.2	10.4	10.8	10.3	10.7
1967	12.2	10.6	10.7	10.5	10.8
1968	12.7	10.5	11.0	10.2	10.8
1969	12.7	10.6	10.6	10.5	10.9
1970	11.9	10.5	10.7	10.4	10.7
1971	12.3	10.8	10.9	10.8	11.0
1972	12.3	10.9	11.0	10.9	11.1
1973	12.7	11.5	11.2	11.6	11.6
1974	12.9	11.4	11.2	11.6	11.7
1975	12.1	11.0	10.6	11.3	11.2
1976	12.2	10.8	10.7	11.0	11.0
1977	11.7	10.4	10.0	10.7	10.6
1978	11.4	10.3	10.0	10.4	10.5
1979	11.5	10.4	10.0	10.7	10.6
1980	11.4	10.2	9.8	10.5	10.4
1981	10.9	10.1	9.5	10.5	10.2

(1) The role of quality pregnant care has already been mentioned. We have looked for an eventual relationship between gestational age at first attendance, the number of visits during pregnancy and the incidence of low birthweight. Tables V and VI demonstrate well that mothers visit-

ing pregnant care clinics early and often have a lower rate of low birthweight newborns. These data do not reflect the quality and structure of antenatal care. It is obvious that its quality should be improved; the data in Table VII show the percentage of low-birthweight babies born to mothers whose pregnancy had not been declared as being at risk.

(2) From the data shown in Table VIII it is quite obvious that there is an inverse relationship between the educational level of the mother and the low birthweight of her child. The educational level may exert its favourable effect in several ways. First, it has an influence on the mother's profession; it is well-known that mothers employed in certain branches (building industry, agricultural physical work, transport, cleaners, office messengers) may have an incidence of low birthweight as high as 13.8–16.8% as compared with the 10.2% national mean in 1981. The

TABLE XI

Incidence of low birthweight (less than 2500 g) by regions

Name of region	1960	1965	1970	1975	1980	1981
Budapest	11.4	12.5	11.9	12.1	11.4	10.9
Counties (+town):						
Baranya + Pécs	9.3	12.0	12.3	12.9	11.0	10.6
Bács-Kiskun	9.3	10.4	10.1	10.8	9.4	8.8
Békés	8.1	9.8	8.5	9.5	8.9	8.8
Borsod-A.-Z. + Miskolc	10.3	11.2	12.2	12.1	12.3	11.3
Csongrád + Szeged	8.4	9.5	9.1	9.7	8.8	9.3
Fejér	8.7	9.8	9.8	9.8	9.5	8.9
Győr-Sopron + Győr	8.0	9.4	8.9	8.5	8.1	9.0
Hajdú-Bihar + Debrecen	8.6	10.0	10.4	11.2	9.3	9.9
Heves	9.2	10.8	11.2	12.7	10.6	10.8
Komárom	8.6	9.8	10.3	9.4	10.0	10.2
Nógrád	8.9	10.6	10.4	12.8	10.6	11.8
Pest	9.6	11.1	11.2	11.9	11.0	11.0
Somogy	9.2	12.2	11.6	12.4	11.7	10.8
Szabolcs-Szatmár	8.9	10.0	10.5	11.9	11.6	11.9
Szolnok	8.0	9.5	10.8	10.7	10.3	10.7
Tolna	7.3	10.2	10.8	10.0	8.7	9.2
Vas	8.1	8.9	9.0	9.6	8.0	7.8
Veszprém	7.9	9.8	9.2	9.9	9.0	8.7
Zala	8.4	9.4	10.3	10.5	9.8	8.6
All Hungary	9.2	10.6	10.7	11.2	10.4	10.2

common factor is the physical work load (Table IX). Antenatal care must be focussed on these groups. Generally, a higher educational level is accompanied by a reasonable rationing of the income, higher attendance rates at antenatal clinics and by a lower incidence of detrimental habits (smoking, alcohol consumption, etc.) during pregnancy. We fully agree with Miller [14] in that the social level exerts its effect not by the size of income but indirectly, e. g. by maternal health and maternal interest and compliance in antenatal care. In our opinion, the mother's educational level is a more objective parameter in research of low birthweight than her social layer; this approach also shows the way of possible improvement.

(3) An interesting factor is the type of residence. As it is seen in Table X, the incidence of low birthweight was higher in towns during the fifties and sixties, while in recent years the opposite has been observed; now the incidence is higher in villages than in urban settlements, with a notable exception: in the capital the rate is still high. The phenomenon may be attributed to the uneven level of antenatal care and the industrialization of agricultural production. There are remarkable differences in different parts of our small country; these differences have tended to decrease, probably as a result of the successful work of national and local health authorities (Table XI). It is hoped that their work will overcome the problem of our low birthweight babies.

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