



I. Biroš, I. Bernasovský, N. Stollárová, J. Juřičková

PIGMENTATION OF HAIR AND EYES IN GYPSY CHILDREN FROM EASTERN SLOVAKIA

ABSTRACT: This paper reports on the study of hair and eyes pigmentation in 797 Gypsy children of school age. We found considerable predominance of dark colour of hair (89—100 %) with certain intersexual differences in proportion of individual colour shades in dark hair colour. In both sexes, a gradual darkening of hair depending on the age was found. Dark colour of iris occurred in 74 % of boys and 80 % of girls. In dependence of the age, a gradual lightening in iris colour in Gypsy boys and a darkening in Gypsy girls were observed.

KEY WORDS: Gypsy children – Hair colour – Eyes colour.

In Czechoslovakia, the highest concentration of Gypsy inhabitants is in Eastern Slovakia. As follows from statistical reports and analyses (Správy, 1989), 136 177 Gypsies were recorded in the region to December 31, 1988, around 42 % of them being children in the age from birth up to 14 years.

Several studies have been dedicated to the investigation of body growth and development of Gypsy children's population in Eastern Slovakia. Besides anthropometric examination (Bernasovský et al. 1983a, 1985a, 1986d, 1987; Labanc 1988), also bone age (Bernasovský 1986d), sexual development and gonadotrophic hormone levels (Hudáková 1979, 1980, 1982, 1983a; Bernasovský et al. 1982) and imunoglobulin levels (Bernasovský 1981b) have been studied.

In the present paper we report on the pigmentation of hair and eyes in Gypsy children from Eastern Slovakia, comparing our results with those obtained by other authors.

SUBJECT AND METHODS

The colour of hair and eyes (exactly the iris) was examined in 418 Gypsy boys and 379 Gypsy girls in the age of 7—14 years from various regions of Eastern Slovakia.

Hair pigmentation was determined according to the scale of Fisher-Saller's pattern that distinguished altogether 24 colour shades of fair, mid and dark hair (shades I—VI). This differentiation is, however, too detailed to evaluate the large groups of probands. Therefore, as it is commonly practised according to Martin and Saller (1957/59) and Saller (1964), adjoining colour shades were integrated into five groups:

SHADES	
1/ fair	A — L
2/ medium	M — O
3/ brown	P — T
4/ dark	U — Y
5/ red	I — VI

Eyes colour was determined according to Martin-Saller's scale distinguishing 16 colour shades in all. Like hair pigmentation, colours of iris were also integrated into five groups:

SHADES	
1/ light	1a — 4b
2/ grey	5 — 10
3/ pale brown	11 — 12
4/ brown	13
5/ brown-black	14 — 16 } dark

Classification of the children in age categories was made on the basis of calendar age using decimal analysis of the age, for instance the group of 7 year-old children consisted of those between the age of 6.500 to 7.499 years at testing day.

Graphic evaluation of the results was done on a computer AT 386 using HARVARD GRAPHICS program.

RESULTS AND DISCUSSION

Evaluation of hair pigmentation

The obtained results concerning hair pigmentation in Gypsy children are shown in Tables 1 and 2 and Figures 1 and 2. It is apparent that fair and medium colour of hair occurs very sporadically. Only one boy with shade L, one girl with K and one with O shade were found. The frequency of brown hair occurrence, although higher, did not exceed 10 % within the whole period followed. In both sexes, a marked predominance of dark hair (89—100 %) was recorded, with the highest incidence of hair shade Y — on the average 59 % in boys and 46 % in girls (Figure 1). Some intersexual differences are seen also in the proportion of shades W and X.

The percentage proportion of individual shades depending on chronological age is shown in Figure 2. It can be seen that

a gradual hair darkening occurs with the age, resulting in a percent increase in hair shade Y. This finding differs from the results obtained by Dokládal (1977) who has noted neither marked differences in hair pigmentation between Gypsy boys and girls nor changes of colour during postnatal ontogenesis. On the other hand, Malá (1975), in longitudinal investigation of, however, a small number of Gypsy children from the Children's Home in Bořislav, district of Teplice, has reported on a slight darkening in hair colour within 4 years, that is from the shade V to shades X or Y (Malá, Suchý 1971).

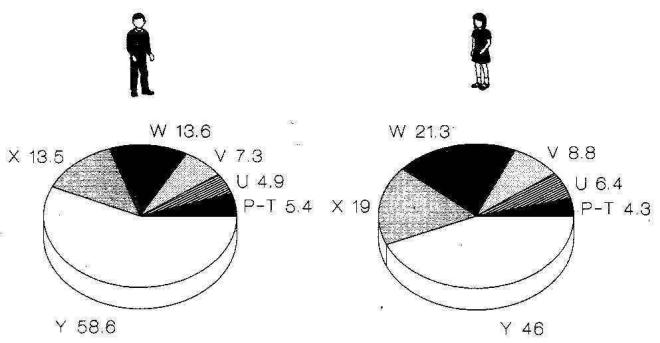


FIGURE 1. Hair pigmentation in Gypsy children from Eastern Slovakia regardless of chronological age.

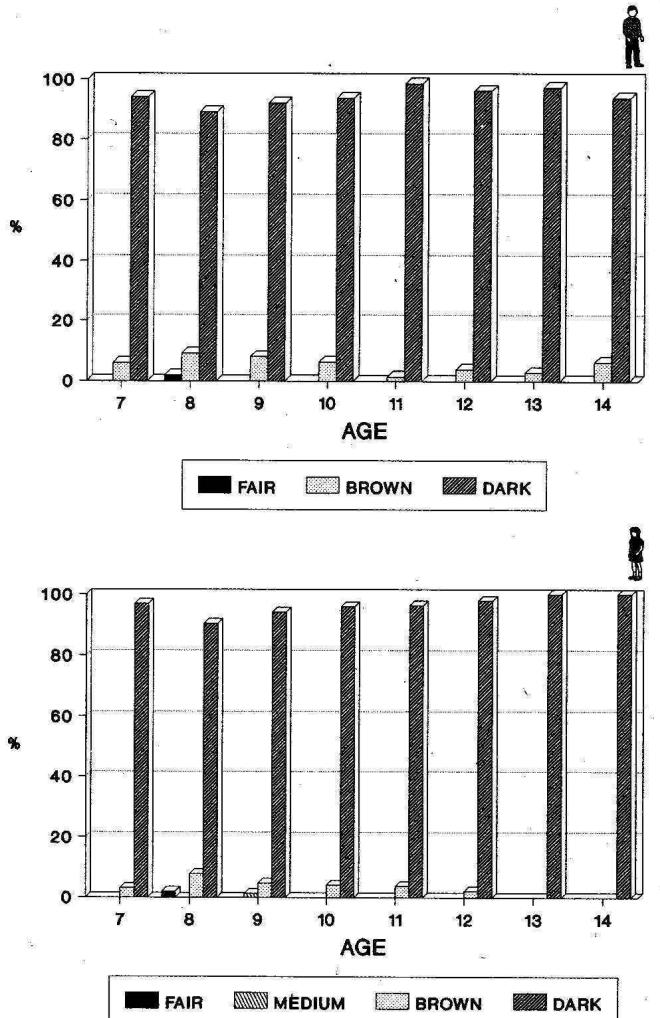


FIGURE 2. Hair pigmentation in Gypsy children from Eastern Slovakia with regard to chronological age.

Red colour of hair was recorded in one boy only (shade III) and in one girl (shade II).

A comparison of percentage proportion of dark hair in our probands with other Gypsy groups from various regions of Czechoslovakia (Malá 1975, Dokládal 1977 and Mišková et al. 1982) is presented in Table 3. It is obvious that dark hair pigmentation predominated in all groups (from 89.9 to 100 %). So, our results are in good agreement with the results of the above authors.

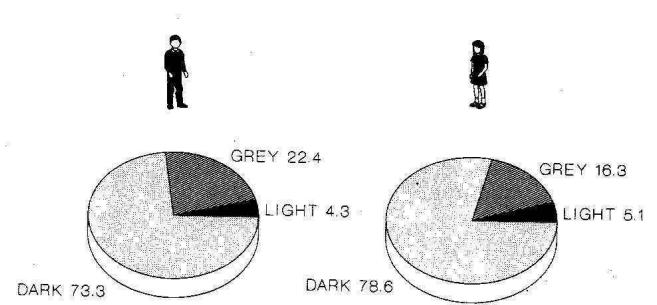


FIGURE 3. Eyes pigmentation in Gypsy children from Eastern Slovakia regardless of chronological age.

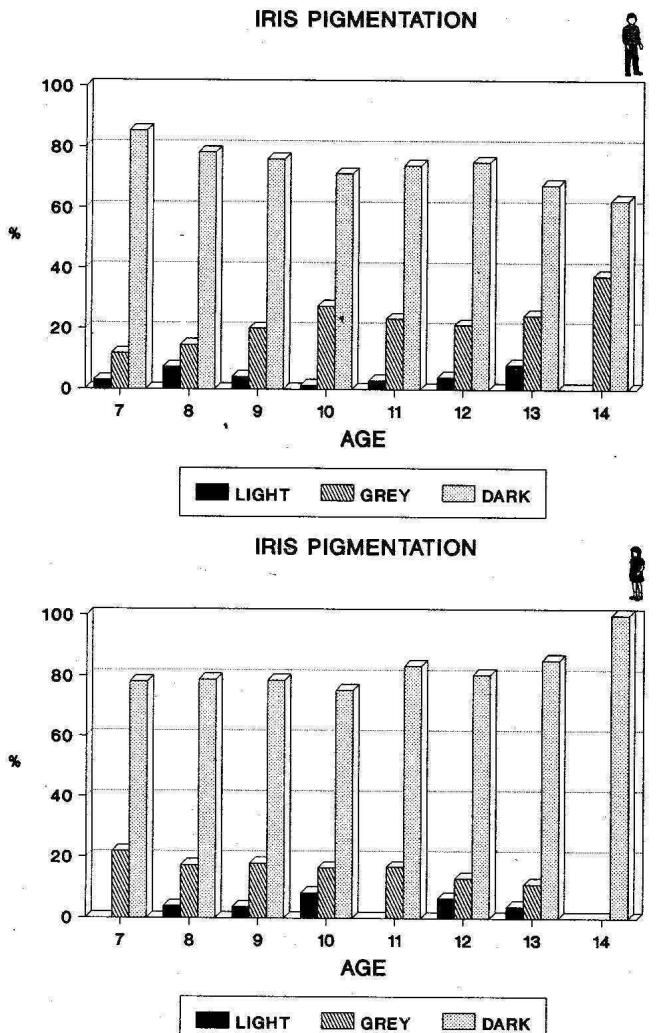


FIGURE 4. Eyes pigmentation in Gypsy children from Eastern Slovakia with regard to chronological age.

TABLE 1. Hair pigmentation in Gypsy boys from Eastern Slovakia with regard to chronological age.

Age groups	No	Shade															
		Brown		Dark		P - T		U		V		W		X		Y	
		No	%	No	%	No	%	No	%	No	%	No	%	No	%		
7	34	2	5.88	3	8.88	3	8.82	4	11.76	4	11.67	18	52.94				
8	55	5	9.09	2	3.64	6	10.91	11	20.00	9	16.36	21	38.18				
9	75	6	8.00	2	2.66	9	12.00	12	16.00	13	17.33	33	44.00				
10	80	5	6.25	5	6.25	4	5.00	7	8.75	12	15.00	47	58.75				
11	69	1	1.45	2	2.90	3	4.34	10	14.49	11	15.94	42	60.86				
12	52	2	3.85	0	0.00	1	1.92	4	7.69	6	11.53	39	75.00				
13	36	1	2.77	0	0.00	1	2.77	6	16.67	5	13.89	23	63.89				
14	16	1	6.25	0	0.00	2	12.50	0	0.00	1	6.25	12	75.00				

TABLE 2. Hair pigmentation in Gypsy girls from Eastern Slovakia with regard to chronological age.

Age groups	No	Shade															
		Brown		Dark		P - T		U		V		W		X		Y	
		No	%	No	%	No	%	No	%	No	%	No	%	No	%		
7	32	1	3.12	0	0.00	6	18.75	8	25.00	4	12.50	13	40.62				
8	52	4	7.69	2	3.85	4	7.69	8	15.38	10	19.23	22	42.31				
9	84	4	4.76	5	5.95	5	5.95	18	21.93	21	25.00	30	35.71				
10	73	3	4.11	0	0.00	7	9.59	15	20.55	15	20.55	32	43.84				
11	54	2	3.70	4	7.41	2	3.70	21	38.89	10	18.52	15	27.78				
12	46	1	2.17	4	8.69	3	6.52	4	8.69	13	28.26	21	45.65				
13	27	0	0.00	1	3.70	0	0.00	5	18.51	5	18.51	16	59.25				
14	11	0	0.00	1	9.09	1	9.09	0	0.00	1	9.09	8	72.72				

Evaluation of iris pigmentation

The percentage proportion of primary colours of the iris in Gypsy children from Eastern Slovakia is given in Figure 3. Dark pigmentation predominates considerably over the light one, in boys (73 %) as well as in girls (79 %). In both sexes, almost the same occurrence of individual coloured groups was found (the differences were lesser than 6 %).

It is interesting to note the distribution of iris pigmentation depending on chronological age (Figure 4). In Gypsy boys age-dependent decrease in dark iris proportion (from 85 % in the 7-year-old to 62 % in the 14-year-old group) was observed, whereas in girls age-dependent increase (78 % in the 7-year-old to 100 % in the 14-year-old group) was noted. Furthermore, in Gypsy boys (Table 4), but not in Gypsy girls (Table 5), the proportion of brown-black iris in total dark colour decreases with the age — from 50 % in the 7-year-old to 18.7 % in the 14 year-old boys. These findings do not agree with those obtained by Dokládal (1980) who has found no intersexual differences in eyes colour as well as no age-dependent changes in eyes colour in Gypsy children.

A comparison of percentual proportion of dark iris in Gypsy children of our group to Gypsy children from various regions of Czechoslovakia (Table 6) shows good agreement of our results with those published by other authors.

TABLE 3. The dark pigmentation of hair in Gypsy children from various regions of Czechoslovakia.

Area	Hair pigmentation	
	Boys (%)	Girls (%)
District of Teplice Malá, 1975	96.1	100.0
Region of South-Bohemia Malá, 1975	100.0	100.0
District of Topol'čany Malá, 1975	100.0	98.9
Region of East-Slovakia Malá, 1975	89.8	90.0
Moravia Dokládal, 1977	96.0	94.9
District of Humenné Mišková a kol. 1982	100.0	100.0
Region of East-Slovakia our results	97.9	98.2

TABLE 4. Eyes pigmentation in Gypsy boys from Eastern Slovakia with regard to chronological age.

Age groups	No	Shade									
		Light		Grey		Dark					
		1a - 4b		5. - 10		11. - 12.		13.		14. - 16.	
		No	%	No	%	No	%	No	%	No	%
7	34	1	2.94	4	11.76	8	23.52	4	11.76	17	50.00
8	55	4	7.27	8	14.54	16	29.09	5	9.09	22	40.03
9	75	3	4.00	15	20.00	12	29.33	11	14.66	24	31.99
10	80	1	1.25	22	27.50	22	27.50	15	18.75	20	25.00
11	69	2	2.89	16	23.19	18	26.08	8	11.59	25	36.22
12	52	2	3.85	11	21.15	16	30.76	8	15.38	15	28.85
13	36	3	8.11	9	24.32	12	32.43	3	8.11	10	27.03
14	16	0	0.00	6	37.50	7	43.75	0	0.00	3	18.75

TABLE 5. Eyes pigmentation in Gypsy girls from Eastern Slovakia with regard to chronological age.

Age groups	No	Shade									
		Light		Grey		Dark					
		1a - 4b		5. - 10		11. - 12.		13.		14. - 16.	
		No	%	No	%	No	%	No	%	No	%
7	32	0	0.00	7	21.87	10	31.25	4	12.50	11	34.37
8	52	2	3.85	9	17.31	16	30.76	3	5.76	22	42.29
9	84	3	3.57	15	17.86	29	34.52	11	13.09	26	30.94
10	73	6	8.22	12	16.44	23	31.49	8	10.95	24	32.85
11	54	0	0.00	9	16.67	19	35.18	8	14.81	18	33.32
12	46	3	6.52	6	13.04	17	36.95	4	8.69	16	34.77
13	27	1	3.70	3	11.11	9	33.31	6	22.22	8	29.60
14	11	0	0.00	0	0.00	4	36.36	3	27.27	4	36.36

TABLE 6. The dark pigmentation of eyes in Gypsy children from various regions of Czechoslovakia.

Area	Eyes pigmentation	
	Boys (%)	Girls (%)
District of Teplice Malá, 1975	65.4	74.5
Region of South-Bohemia Malá, 1975	84.4	83.2
District of Topoľčany Malá, 1975	76.0	75.4
Region of East-Slovakia Malá, 1975	69.4	61.4
Moravia Dokládal, 1977	85.4	90.3
District of Humenné Mišková a kol. 1982	86.5	88.2
Region of East-Slovakia our results	73.2	80.0

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Ivan Biroš
Institute of Biology
Faculty of Natural Sciences
Šafárik University
Šrobárova 57
041 67 Košice, Slovakia

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