

ANTHROPOPHYSIOLOGICAL CHARACTERIZATION OF BULGARIAN POPULATION FROM THE REGIONS OF PANAGURISHTE AND STRELCHA

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Summary: It were examined 90 men and 90 women from Panagurishte and 100 men and 100 women from Strelcha. It were followed the next anthropophysiological traits: Index digitalis, Hand clasping, Arm folding, Leg folding and Tongue rolling. At Index digitalis was observed nearly full predomination of the symmetric types. At Tongue rolling it was established an underlined predomination of the positive type. At clapping test, in this investigation, the most often is the right type, followed of neutral and left type. For Arm folding test is characteristic, that the left type is more often and for Leg folding - the right one. About the Hand clasping is established a predomination of the left type and the neutral type is not observed. Besides, there are not regional differences between the groups, but it were observed sexual differences at Clapping test ($p < 0.001$). In comparison with the middle values, characteristic for our country, it were established some regional differences.

Key words: Index digitalis, Hand clasping, Arm folding, Clapping, Leg folding, Tongue rolling testes

Introduction

During the last decades in the scientific practice are included a row of significant physiological tests at determination of the anthropologic characterization of the population. These tests are genetic determined and are under the regulation of the central nervous system. They have application in the population - genetic investigations. The investigations are carried out in the next directions: ethnical aspect (Ley, J. C., R. Y. Walsch, 1965; Boev, P., V. Todorov, 1969; Gavrilovic, Ž., V. Božic, 1972; Boev, P., V. Todorov, 1973; Todorov, V., St. Vizev, 1981; Todorov, V., S. Maximova, M. Marcovic, 2000), regional aspect (Todorov V., 1998; Minkov, C., N. Paraskova, V. Todorov, 2004; Minkov, Ts., B. Minkov, V. Todorov, 2006; Minkov, C., V. Todorov, B. Minkov, 2007), aged aspect (Marcinkova, D., 1971; Gavrilovic, Ž., Radojevic, 1976; Todorov, V., 1998) and the most rarely in the clinical aspect (Vizev, St., V. Todorov, 1981; Todorov, V., 1998).

Purposes and tasks

The purpose is, on the basis of the obtained results, to be added the anthropological characterization of the population in the studied regions. Besides, to be searched for regionally and sexually differences, according to the studied tests.

Material and methods

In this study are investigated 90 men and 90 women from the region of Panagurishte and 100 men and 100 women from the region of Strelcha, on age of 12 to 14 years old. It were examined the next anthropological tests: Tongue rolling, Index digitalis, Hand clasping, Arm folding, Clapping and Leg folding.

During the carried out investigation from us, it were used the next methods: for Tongue rolling test the method of A. H. Sturtavant (1940), for Index digitalis of A. Ecker (1875), for Hand clasping - of A. Leguebe (1967), for Arm folding - the method of E. H. Collins (1960), for Clapping - this one of H. Blincoe (1962). At the processing of the obtained results it is used the alternative analysis. For beter clearness is used a graphical analysis as well. The differences are determinated by means of the method t-criterium. The obtained results are presented in the Tables 1-6.

Results and discussion

Tongue rolling (rolling the tongue in tube). The obtained results are presented in Table 1.

The obtained results are presented in Table 1. In this investigation in both populations and at both sexes predominate the cases in which the test is carried out (men - 61.10% and 53%, and women - 56.70% and 57%), more strongly expessed in men. It were not established significant sexual and regional differences between both examined groups. According to this trait the studied population is homogenous. In comparison of our results with the controls (Todorov, 1998) are not noted significant differences (men - 58.13% to 61.10%) and 53% women - 53.23% to 56.70% and 57% and as a whole - 55.73% to 58.90% and 55.00%. According to this trait the examined population is not differed from the distribution characteristic, for the country.

Table 1. Frequency of types of Tongue rolling in the population from Panagurishte and Strelcha

Groups	Types				
	+		-		
	n	%	n	%	
Men from Panagurishte	55	61,1	35	38,9	90
Women from Panagurishte	51	56,7	39	43,3	90
Men and women from Panagurishte	106	58,9	74	41,1	180
Men from Strelcha	53	53	47	47	100
Women from Strelcha	57	57	43	43	100
Men and women from Strelcha	110	55	90	45	100

The realization of this phenomenon is not obligatory in young age as well, but its keeping in deep old age shows a preserved coordination from the central nervous system (Todorov, 1998). The breach of the control in some illness (brain sclerosis and oligophrenia) lead to sharp decreasing of the ability for realization of the test (Todorov, 1998; Vizev, Todorov, 1998).

Index digitalis

The results from the exploration are presented in Table 2. The analysis of the obtained results shows underlined (nearly full) predomination of the symmetric types in both studied populations (99.50% and 97.50%) but more increased frequency we observe in the group from Panagurishte. The most frequently is observed type AA (more underlined in men), follows the II and = =. The spreading of II type is bigger in women, in both studied groups (30.0% and 30.0% to 18.90%). The asymmetric types (IA/IA, =A/A=, =I/I=) are observed too rarely (0.55% and 2.50%), smaller in men.

Table 2. Frequency of types of Index digitalis in the population from Panagurishte and Strelcha

Groupes		Index digitalis								
		all symetri	AA	II	= =	all symetri	AIAI	=A,A=	I=,I=	
men from Panagurishte	n	90	54	17	19	0	0	0	0	90
men from Panagurishte	%	100	60.0	18.9	21.1	0	0	0	0	
women from Panagurishte	n	89	43	27	19	1	1	0	0	90
women from Panagurishte	%	98.9	47.8	30.0	21.1	1.1	1.1	0	0	
men and women from Panagurishte	n	179	97	44	38	1	1	0	0	180
men and women from Panagurishte	%	99.5	53.9	24.5	21.1	0.55	0.55	0	0	
men from Strelcha	n	98	79	8	11	2	1	1	0	100
men from Strelcha	%	98.0	79.0	8.0	11.0	2.0	1	1	0	
women from Strelcha	n	97	44	30	23	3	3	0	0	100
women from Strelcha	%	97.0	44.0	30.0	23.0	3.0	3.0	0	0	
men and women from Strelcha	n	195	123	38	34	5	4	1	0	200
men and women from Strelcha	%	97.5	61.5	19.0	17.0	2.5	2.0	0.5	0	

In comparison with the control group, it is established an underlined difference in the spreading of the asymmetric types because in it they are 30.04% from the cases ($P < 0.001$).

The arranging of the types in the control is in the same order.

Hand clasping (interlacing of the fingers).

The results of the studying are presented in Table 3. It was established, that in the embracing contingent (the investigated population), in both sexes, meets the left type of carrying out, more strongly expressed in men (56.70% and 59.00% to 53.30% and 55.00%). It is not observed neutral type. There are not sexual and regional differences between the investigated groups. The distribution of the separate types distinguishes visibly from this one of the control (the middle values for the country) where the right type is the most presented (52.79% to 43.00% for the whole population). Besides, it is observed a neutral type /at least rarely/ (0.40%). There are no significant differences.

Table 3. Frequency of types of Hand clasping in the population from Panagurishte and Strelcha

Groups	Types					
	left		right		neutral	
	n	%	n	%	n	%
men from Panagurishte	51	56.7	39	43.3	0	0
women from Panagurishte	48	53.30	42	46.70	0	0
men and women from Panagurishte	99	55.0	81	45.0	0	0
men from Strelcha	59	59.0	41	41.0	0	0
women from Strelcha	55	55.0	45	45.0	0	0
men and women from Strelcha	114	57.0	86	43.0	0	0

Arm folding (a cross of the arms).

Data of the caring out examination are presented in table 4. It was established, that in both groups, the left type is more presented, which is more strongly expressed in the population from Strelcha (57.50% to 55%). At women are reported higher values of this type, that is more strongly expressed in the group from Strelcha (61.00% to 55.60%)

Table 4. Frequency of types of Arm folding in the population from Panagurishte and Strelcha

Groups	Types			
	left		right	
	n	%	n	%
men from Panagurishte	49	54.4	41	45.6
women from Panagurishte	50	55.6	40	44.4
men and women from Panagurishte	99	55	81	45
men from Strelcha	54	54	46	46
women from Strelcha	61	61	39	39
men and women from Strelcha	115	57.5	85	42.5

There are no significant regional and sexual differences between both groups.

In comparison with the control group (the middle values for the country). It was established in our investigation, a higher concentration of the left type, which is better expressed in women (52.69% to 55.60% and 61%) but in men as well (50.98% to 54.40%) and for the whole extract the picture is the same (51.70% to 55.00% and 57.50%). There are no, however, significant differences.

Clapping (applause).

The obtained results are presented on Table 5. At our investigation in both groups and in both sexes, the most frequently is observed the right type of carrying out, nearly equally in both examined groups (58.90% and 57.00%), follows the neutral type and the most rarely is the left type (13.90% and 13.00%). Whith respect to this test our excerpt is homogenous. It were observed, however, significant sexual differences ($p < 0.001$). At control group (middle values for the country) is observed the same arranging of the separated types, but the frequency of the right type is bigger for both sexes and for the whole extract. There are no significant differences between the data of our investigation and these one from the control.

Table 5. Frequency of types of Clapping in the population from Panagurishte and Strelcha

Groupes	Types					
	left		right		neutral	
	n	%	n	%	n	%
men from Panagurishte	17	18.9	53	58.9	20	22.5
women from Panagurishte	8	8.9	41	45.6	41	45.5
men and women from Panagurishte	25	13.9	94	52.2	61	33.9
men from Strelcha	15	15	57	57	28	28
women from Strelcha	11	11	43	43	46	46
men and women from Strelcha	26	13	100	50	74	37

Leg foldng (crossing of the legs).

The obtained results are presented on table 6.

In both regions predominates the right type of carrying out and besides with equal values (80%). In the group from Panagurishte, in women is observed a bigger frequency of this type than in men (81.1% to 78.90%), but in the group from Strelcha the values are identically - 80.00%. There are no sexual and regional differences between both examined group by this trait. At the control group is observed the same type of arranging of the separated types. It was established, that in our investigations the relative share of the persons carried out the test with right type is bigger than in the control (men - 78.90% and 80.0% to 70.83%, women - 81.10% and 80.0% to 77.50%) and as whole - men and women - 80.0% to 73.89%. These differences are more expressed in men. There are no significant differences by this test between the data from our investigation and the data from the control.

Table 6. Frequency of types of Leg folding in the population from Panagurishte and Strelcha

Groupes	Types			
	left		right	
	n	%	n	%
men from Panagurishte	19	21.1	71	78.9
women from Panagurishte	17	18.9	73	81.1
men and women from Panagurishte	36	20	144	80
men from Strelcha	20	20	80	80
women from Strelcha	20	20	80	80
men and women from Strelcha	40	20	160	80

From the analysis of the tracing out anthropological tests it was established, that the investigated population is homogenous according to these traits. Besides, there are no regional differences between both groups, and exist sexual differences only by Clapping test.

Significant differences between our investigations and the middle values for the country are reported only at Index digitalis test. However, there are definite and visible differences, at bast insignificant, at Hand clasping test, where predomonates the left type. There are a higher value as well of the left at Arm folding test and a bigger percentage of the right type at the Clapping test.

Conclusions

With respect to the embraced tests the studied population from both regions is too homogenous.

Significant differences towards the controls are established only at Index digitalis with the total predomination of the symmetric types.

It were established regional differences at least insignificant, between the studied from us population and the rest population of the country. A fully coincidence with the middle values for the country we observe only at Tongue rolling test.

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ANTROPOFIZIOLOŠKA KARAKTERIZACIJA POPULACIJE BUGARA IZ REGIONA PANAGURISHTA I STRELCHA

Izvod

Proučeno je 90 muškaraca i 90 žena iz Panagurishta i 100 muškaraca i 100 žena iz Strelche. Praćene su sledeće antropofiziološke karakteristike: digitalni indeks, stisak šaka, savijanje ruku, savijanje nogu i uvijanje jezika. Kod digitalnog indeksa je uočena skoro puna predominacija simetričnih tipova. Kod uvijanja jezika je utvrđena istaknuta predominacija pozitivnog tipa. Kod testa sklapanja šaka, u ovom istraživanju, najčešći je desni tip, zatim neutralni i levi tip. Za test savijanja ruku karakteristično je da je levi tip češći, a za savijanje nogu – desni tip. Što se tiče stiskanja šaka, utvrđena je predominacija levog tipa dok neutralni tip nije uočen. Osim toga, ne postoje regionalne razlike između grupa, ali je uočen polni dimorfizam na testu sklapanja šaka ($p < 0.001$). U poređenju sa srednjim vrednostima, karakterističnim za našu zemlju, utvrđene su neke regionalne razlike.

Ključne reči: digitalni indeks, stisak šaka, savijanje ruku, sklapanje šaka, savijanje nogu, testovi uvijanja jezika