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Predictive assessment of the association of dermatoglyphic indicators with indicators of personality traits, established by factor analysis

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According to modern scientific literature, specific dermatoglyphic signs can be diagnostic markers of a person's mental state. The purpose of the work is to identify the association of dermatoglyphic indicators with personality characteristics of practically healthy men of Ukraine. From the data bank of the materials of the research center of National Pirogov Memorial Medical University, Vinnytsya were taken the primary dermatoglyphic and questionnaires indicators of personality characteristics of 92 practically healthy men in the third generation residents of Vinnytsya, Khmelnytsky, part of Ternopil and Zhytomyr regions. Processing of dermatoglyphs was performed according to the method of Cummins H. and Midlo Ch. (1961) in the statement by Gladkova T.D. (1966). For objective evaluation of personality traits of practically healthy men, a number of leading indicators were determined, which included a number of properties of temperament (according to Eysenck), anxiety (according to Spielberger), accentuated personality traits (according to Shmishek), motivational orientation of personality (by Rotter), as well as the peculiarities of psycho-emotional organization of personality, aggressiveness, the level of distribution of asthenic and depressive personality manifestations (by the color test of Luscher), which were determined on the basis of personal use personality questionnaires and test methods. Factor analysis was performed in the "Statistica 6.1" license package. The main factors that indicate the association of personality traits of practically healthy men with some dermatoglyphic indicators are identified: "ridge count of fingers" (dispersion ratio - 13.22%) and "atd angle" (dispersion ratio - 10.66%). Analysis of the obtained relationships of the interdependence of indicators of personality characteristics with dermatoglyphic indicators showed that with increasing indicators of ridge counts of the fingers and the delta index the degree of probability of growth of indicators of neuroticism according to Eysenck, situational and personal anxiety according to Spielberger, the accentuation of the character of the emotional and arousing types by Shmishek, subjective control in the field of health and illness according to Rotter, black and gray color by Luscher decreases, and the indicators of the accentuation of the character of the anxious and demonstrative types by Shmishek, the overall internality of the level of subjective control in the field of educational (professional) relations according to Rotter, blue and blue-green color by Luscher - is increasing. As the magnitude of the angle atd increases on both hands, the degree of likelihood of growth of neuroticism according to Eysenck, situational and personal anxiety according to Spielberger, accentuation of the character of the emotional, anxious and arousing types by Shmishek, blue color by Luscher increase, and indicators of accentuation of the character of the demonstrative type according to Shmishek, the general internality of the level of subjective control, in the field of educational (professional) relations and in the field of health and illness according to Rotter, blue-green, black and gray color according to Luscher - decrease. The use of factor analysis has allowed to determine the most significant correlation of indicators of personality characteristics with dermatoglyphic indicators.

Keywords: dermatoglyphic indices, indices of personality traits, practically healthy men, factor analysis.

Introduction

Separation of a particular branch of dermatoglyphics - psychodermatoglyphics was the result of numerous works devoted to finding a connection between the peculiarities of the skin pattern and the mental sphere of human life. This branch finds its application for professional profile selection of employees, students, pupils, revealing a tendency to mental illness, creating a psychological portrait for the needs of police, etc. [6, 15, 16].

In 2016, T. Ye. Afonichev, Yu. O. Tyshkovets, and M. V. Filippova [2] conducted an experiment aimed at determining the relationship between the features of skin patterns of finger and the level of student success. 60 students were selected for the study, which were divided into 4 groups according to mental development after passing the Eysenck test. Whorls (32.8 %) were found to be more prevalent in high-intelligence individuals, especially on the left hand. Students with low mental development tend to have loop patterns (65.0 %), and most of them were found on the third and fifth fingers of left and right hands.

210 people enrolled in Lagos (Nigeria) schools were screened to identify specific dermatoglyphic markers of giftedness to one or another type of learning [1]. The respondents belonged to the Yoruba, Igbo and Hausa ethnic groups. The most common among gifted schoolchildren were such elements of patterns as whorls and ulnar loops. Thus, 65 % of schoolchildren who have a gift for music education have a pattern type - whorl. At the same time, ulnar loops on the second finger of the left and right hands were the most characteristic among schoolchildren with a genius for the logical and mathematical sciences.

A similar study that had the same purpose was conducted in 2014 by Kumari K.L., Babu P.V. and Kumar S.V. [18]. This study found only an increase in the number of ulnar loops and a significant prevalence of whorls when examining students studying medical specialties.

The features of skin pattern in depressed individuals have been identified by a group of Chinese scientists [19]. V.O. Tikhonov and Yu.J. Guminsky established the features of dermatoglyphics in patients with paranoid form of schizophrenia depending on the duration of inpatient treatment. When comparing dermatoglyphics data between healthy and diseased individuals, significant differences in both quantitative indexes of palmar and finger dermatoglyphics were revealed [25]. A team of scientists analyzed 22 studies in the period 1968-2012, on the topic of the relationship between indicators of skin pattern and schizophrenia. It has been found that the most frequently mentioned in articles statistically significant indicators were total finger ridge score and the palmar ridge score on the line connecting the tri-radial a-b [12]. A similar study was conducted by a group of Bulgarian researchers, who also point to the priority importance of the index of the palmar ridge score on the line connecting the tri-radial a-b in this disease [3].

The purpose of the work is to identify the association of

dermatoglyphic indicators with personality characteristics of practically healthy men of Ukraine.

Materials and methods

From the data bank of the materials of the research center of National Pirogov Memorial Medical University, Vinnytsya were taken primary dermatoglyphic indices and personality indicators of 92 practically healthy men (selected after psychophysiological and psycho-hygienic questionnaire and detailed clinical examination) of the first mature age in the third generation residents of Vinnytsiya, Khmelnytsky region, parts of Ternopil and Zhytomyr regions (Podillia region).

Processing of dermatoglyphs was performed according to the method of Cummins H. and Midlo Ch. [8] in the statement by Gladkova T.D. [11].

For objective evaluation of personality traits of practically healthy men, a number of leading indicators were determined, which included a number of properties of temperament (according to Eysenck), anxiety (according to Spielberger), accentuated personality traits (according to Shmishek), motivational orientation of personality (by Rotter), as well as the peculiarities of psycho-emotional organization of personality, aggression, the level of distribution of asthenic and depressive personality manifestations (by the Luscher color test), which were determined on the basis of the use of personality's questionnaires and test methods [9, 10, 13, 17, 20, 22-24].

For the purpose of prognostic assessment of the influence of dermatoglyphic indices on the indices of personality traits of practically healthy men of Ukraine used factor analysis, which was carried out in the licensing package "Statistica 6.1" [5].

Results

For factor analysis, we included all indices of personality traits, indexes of finger and palmar dermatoglyphics, and asymmetry indices of dermatoglyphic indices that have no negative values.

Using the "scree plot", 3 separate factors were identified (Fig. 1).

Fig. 1. Select the number of factors with the help of "scree plot".

Table 1. The results of primary data processing using factor analysis.

	Eigenval	% total Variance	Cumul. Eigenval	Cumul. %
1	13.31	11.78	13.31	11.78
2	10.57	9.35	23.88	21.13
3	6.24	5.53	30.12	26.66

Notes: Eigenval - eigenvalues; % total Variance - % of total variance; Cumul. Eigenval - sum of eigenvalues; Cumul. % - accumulated percentage of variance.

As a result of the use of factor analysis for 3 factors, we have established the following main characteristics (Table 1).

Since the eigenvalues of all factors are greater than 1, they have the right to exist by the first criterion for the selection of factors. The total amount of variance is 30.1 %, but the third "part" of the variance is different from the previous one, so it can be abandoned (see Table 1).

Then we calculated the load (correlation coefficients between the original variables and the values of the factors), which allowed us to allocate the most significant load for each factor (Table 2).

Table 2 shows that the first factor includes the quantitative indexes of finger dermatoglyphics, and the second - the magnitude of the angles on the palms.

To maximize the scatter of load squares, we used the Varimax method for each factor (Table 3). When comparing the results with the data in Table 2, we can see that the magnitude of the loadings in the first factor remained practically unchanged. In the second factor, only the magnitude of the atd angle on the right and left palms remained among the most significant loads (see Tables 2, 3).

Taking into account the results obtained, the first factor can be defined as the "ridge count of the fingers" and the second factor - the "angle atd".

The obtained results allow in practically healthy men of Ukraine to define and formalize the interdependence of indicators of personality characteristics with dermatoglyphic indicators in the form of the following relationships: $y_{(AZ_E)} = 0.361f_1 + 0.011f_2$; $y_{(AZ_N)} = -0.084f_1 + 0.454f_2$; $y_{(AZ_L)} = -0.092f_1 + -0.185f_2$; $y_{(SP_ST)} = -0.116f_1 + 0.016f_2$; $y_{(SP_LT)} = -0.057f_1 + 0.353f_2$; $y_{(SH_G)} = 0.089f_1 + -0.090f_2$; $y_{(SH_Z)} = -0.101f_1 + 0.408f_2$; $y_{(SH_EM)} = -0.002f_1 + 0.091f_2$; $y_{(SH_P)} = -0.103f_1 + 0.094f_2$; $y_{(SH_T)} = 0.063f_1 + 0.115f_2$; $y_{(SH_C)} = -0.103f_1 + 0.386f_2$; $y_{(SH_DM)} = 0.044f_1 + -0.025f_2$; $y_{(SH_V)} = -0.128f_1 + 0.289f_2$; $y_{(SH_DC)} = -0.055f_1 + 0.143f_2$; $y_{(SH_EK)} = 0.055f_1 + 0.370f_2$; $y_{(USK_1)} = 0.045f_1 + -0.364f_2$; $y_{(USK_2)} = 0.057f_1 + -0.311f_2$; $y_{(USK_3)} = 0.137f_1 + -0.303f_2$; $y_{(USK_4)} = 0.042f_1 + -0.291f_2$; $y_{(USK_5)} = 0.099f_1 + -0.120f_2$; $y_{(USK_6)} = 0.085f_1 + -0.272f_2$; $y_{(USK_7)} = -0.066f_1 + -0.122f_2$; $y_{(LUS_1)} = 0.104f_1 + 0.076f_2$; $y_{(LUS_2)} = 0.133f_1 + -0.007f_2$; $y_{(LUS_3)} = 0.036f_1 + 0.057f_2$; $y_{(LUS_4)} = -0.059f_1 + -0.058f_2$; $y_{(LUS_5)} = -0.060f_1 + -0.038f_2$; $y_{(LUS_6)} = 0.133f_1 + 0.017f_2$; $y_{(LUS_7)} = -0.043f_1 + -0.012f_2$; $y_{(LUS_8)} = -0.287f_1 + -0.049f_2$; where, factor f_1 - should be defined as "ridge count of fingers" (proportion of variance - 13.22 %) and is associated with virtually all indexes of the

Table 2. The value of factor loadings indicators of personality characteristics and dermatoglyphics.

Indicators	Factor Loadings (Varimax raw) Extraction: Principal components (Marked loadings are > .700)		Indicators	Factor Loadings (Varimax raw) Extraction: Principal components (Marked loadings are > .700)	
	Factor 1	Factor 2		Factor 1	Factor 2
1	2	3	4	5	6
AZ_E	0.035	0.012	ATD_R	0.010	0.851
AZ_N	-0.103	0.451	AD_R	0.244	0.496
AZ_L	-0.084	-0.189	CT_R	0.226	-0.617
SP_ST	-0.116	0.011	AB_R	0.050	0.482
SP_LT	-0.071	0.350	BC_R	0.095	0.334
SH_G	0.092	-0.086	CTD_R	0.032	0.568
SH_Z	-0.117	0.403	ATB_R	-0.025	0.687
SH_EM	-0.006	0.091	BTC_R	-0.007	0.482
SH_P	-0.107	0.090	CD_R	0.195	0.229
SH_T	0.058	0.118	DAT_R	-0.018	-0.607
SH_C	-0.119	0.381	ATD_L	0.160	0.834
SH_DM	0.045	-0.023	AD_L	0.209	0.515
SH_V	-0.139	0.284	CT_L	-0.008	-0.678
SH_DC	-0.061	0.141	AB_L	0.074	0.461
SH_EK	0.040	0.372	BC_L	-0.030	0.460
USK_1	0.060	-0.362	CTD_L	0.177	0.507
USK_2	0.070	-0.308	ATB_L	0.171	0.703
USK_3	0.149	-0.297	BTC_L	-0.122	0.523
USK_4	0.054	-0.289	CD_L	0.195	0.236
USK_5	0.104	-0.116	DAT_L	-0.169	-0.613
USK_6	0.096	-0.268	IK_R	0.214	-0.156
USK_7	-0.061	-0.125	IK_L	0.101	-0.170
LUS_1	0.101	0.080	HIP_R	-0.153	0.079
LUS_2	0.133	-0.002	TEN_R	0.015	-0.291
LUS_3	0.034	0.059	I_R	-0.057	-0.182
LUS_4	-0.056	-0.060	II_R	-0.072	0.192
LUS_5	-0.058	-0.040	III_R	-0.216	0.186
LUS_6	0.133	0.022	IV_R	0.196	-0.061
LUS_7	-0.042	-0.014	T1_R	0.030	0.684
LUS_8	-0.284	-0.061	T2_R	0.020	-0.635
TF_R1	0.199	0.079	T3_R	0.023	-0.128
FRC_R1	0.697	-0.001	TT_R	-0.076	0.290
TF_R2	0.100	-0.136	HIP_L	0.003	0.173
FRC_R2	0.815	-0.077	TEN_L	-0.012	-0.199
TF_R3	-0.024	0.009	I_L	-0.126	-0.083
FRC_R3	0.828	-0.073	II_L	-0.121	0.289
TF_R4	0.004	-0.388	III_L	-0.091	0.118
FRC_R4	0.774	0.061	IV_L	-0.009	-0.173
TF_R5	0.230	-0.018	T1_L	0.094	0.643
FRC_R5	0.800	0.041	T2_L	-0.043	-0.621

Continuation table 2.

1	2	3	4	5	6
DTR_R	0.840	-0.040	T3_L	0.070	-0.138
SRC_R	0.955	-0.018	TT_L	-0.052	0.327
TF_L1	0.492	-0.062	RL_TF1	0.270	-0.146
FRC_L1	0.712	-0.040	RL_TF2	0.082	-0.106
TF_L2	0.022	0.029	RL_TF3	0.170	-0.021
FRC_L2	0.846	0.094	RL_TF4	0.275	0.119
TF_L3	0.051	0.214	RL_TF5	0.120	0.035
FRC_L3	0.852	0.032	RL_HIP	0.055	0.043
TF_L4	0.388	0.059	RL_TEN	0.035	0.077
FRC_L4	0.813	0.113	RL_I	0.071	0.010
TF_L5	0.283	0.052	RL_II	0.161	-0.047
FRC_L5	0.739	0.154	RL_III	0.267	0.192
DTR_L	0.828	0.029	RL_IV	0.199	0.064
DTR_10	0.879	0.001	RL_T1	-0.172	0.185
SRC_L	0.954	0.079	RL_T2	-0.259	0.077
TRC_10	0.981	0.031	RL_T3	-0.208	-0.042
			RL_TT	0.057	-0.019
			Expl.Var	13.17	10.71
			Prp.Totl	0.117	0.095

Notes: here and in the future, Factor Loadings - factor loadings; Extraction: Principal components - extraction: principal components; Marked loadings are > .700 - marked loadings are >0.700; Factor 1 - factor 1; Factor 2 - factor 2; Expl.Var - the total variance of the factor; Prp.Totl - share of total variance; the most significant loads are highlighted in red; AZ_ - indicators by Eysenck scale (E - extraversion-introversion, N - neuroticism, L - insincerity); SP_ - Spielberger anxiety indicators (ST - situational (reactive) anxiety, LT - personal anxiety); SH_ - indicators of accentuation character by Shmishek (G - hyperthymic type; Z - jamming type; EM - emotional type; P - pedantic type; T - alarming type; C - cyclothymic type; DM - demonstrative type; V - excitable type; DC - dysthymic type; EK - excitable type); USK_ - indicators of the scale of subjective control by Rotter (1 - general internality, 2 - in the field of achievement, 3 - in the field of failure, 4 - in the field of family relations, 5 - in the field of educational (professional) relations, 6 - in the field of interpersonal relations, 7 - in the field of health and illness); LUS_ - indicators of colors by Luscher (1 - blue, 2 - blue-green, 3 - orange-red, 4 - light yellow, 5 - purple, 6 - brown, 7 - black, 8 - gray); _R1 - _R5 - corresponding fingers of the right hand; _L1 - _L5 - corresponding fingers of the left hand; TF_ - the pattern type of the corresponding finger; FRC_ - a local ridge count on each finger; DTR_ - delta index; SRC_ - summary five-finger ridge count; TRC_10 - total finger ridge score; AD_ - the distance between the tri-radial a-d; CT_ - the distance between the tri-radial c-t; AB_ - palm ridge count on line connecting tri-radial a-b; BC_ - palm ridge count on line connecting tri-radial b-c; CTD_ - the size of the angle ctd; ATB_ - the size of the angle atb; BTC_ - the size of the angle btc; CD_ - palm ridge count on line connecting tri-radial c-d; DAT_ - the size of the angle dat; IK_ - index value of major palm lines (Cummins index); HIP_ - the presence of a pattern on the hypotenar; TEN_ - the presence of a pattern on the tenor; I_ - IV_ - the presence of a pattern on the corresponding inter-finger pads; T1_ - the presence of a carpal palm tri-radial; T2_ - the presence of an intermediate palm tri-radial; T3_ - the presence of a central palm tri-radial; TT_ - the presence of several palm tri-radial; RL_ - asymmetry of relevant indicators.

Table 3. The value of factor loadings of indicators of personality characteristics and dermatoglyphics after factor rotation by the Varimax method.

Indicators	Factor Loadings (Varimax normalized) Extraction: Principal components (Marked loadings are > .700)		Indicators	Factor Loadings (Varimax normalized) Extraction: Principal components (Marked loadings are > .700)	
	Factor 1	Factor 2		Factor 1	Factor 2
1	2	3	4	5	6
AZ_E	0.036	0.011	ATD_R	0.045	0.850
AZ_N	-0.084	0.454	AD_R	0.264	0.485
AZ_L	-0.092	-0.185	CT_R	0.201	-0.626
SP_ST	-0.116	0.016	AB_R	0.070	0.480
SP_LT	-0.057	0.353	BC_R	0.109	0.330
SH_G	0.089	-0.090	CTD_R	0.055	0.566
SH_Z	-0.101	0.408	ATB_R	0.003	0.687
SH_EM	-0.002	0.091	BTC_R	0.012	0.481
SH_P	-0.103	0.094	CD_R	0.204	0.220
SH_T	0.063	0.115	DAT_R	-0.043	-0.606
SH_C	-0.103	0.386	ATD_L	0.194	0.827
SH_DM	0.044	-0.025	AD_L	0.230	0.506
SH_V	-0.128	0.289	CT_L	-0.036	-0.677
SH_DC	-0.055	0.143	AB_L	0.093	0.458
SH_EK	0.055	0.370	BC_L	-0.011	0.461
USK_1	0.045	-0.364	CTD_L	0.197	0.500
USK_2	0.057	-0.311	ATB_L	0.200	0.696
USK_3	0.137	-0.303	BTC_L	-0.101	0.527
USK_4	0.042	-0.291	CD_L	0.204	0.228
USK_5	0.099	-0.120	DAT_L	-0.194	-0.606
USK_6	0.085	-0.272	IK_R	0.207	-0.165
USK_7	-0.066	-0.122	IK_L	0.094	-0.174
LUS_1	0.104	0.076	HIP_R	-0.150	0.085
LUS_2	0.133	-0.007	TEN_R	0.003	-0.292
LUS_3	0.036	0.057	I_R	-0.064	-0.179
LUS_4	-0.059	-0.058	II_R	-0.064	0.195
LUS_5	-0.060	-0.038	III_R	-0.208	0.195
LUS_6	0.133	0.017	IV_R	0.193	-0.069
LUS_7	-0.043	-0.012	T1_R	0.058	0.682
LUS_8	-0.287	-0.049	T2_R	-0.006	-0.635
TF_R1	0.202	0.071	T3_R	0.018	-0.129
FRC_R1	0.697	-0.030	TT_R	-0.064	0.293
TF_R2	0.094	-0.140	HP_L	0.010	0.173
FRC_R2	0.811	-0.110	TEN_L	-0.020	-0.198
TF_R3	-0.024	0.010	I_L	-0.129	-0.077
FRC_R3	0.824	-0.107	II_L	-0.109	0.293
TF_R4	-0.012	-0.388	III_L	-0.087	0.121
FRC_R4	0.775	0.029	IV_L	-0.016	-0.173
TF_R5	0.229	-0.028	T1_L	0.120	0.639
FRC_R5	0.801	0.008	T2_L	-0.069	-0.618
DTR_R	0.838	-0.074	T3_L	0.064	-0.141

Continuation table 3.

1	2	3	4	5	6
SRC_R	0.954	-0.058	TT_L	-0.039	0.329
TF_L1	0.489	-0.083	RL_TF1	0.264	-0.157
FRC_L1	0.710	-0.069	RL_TF2	0.077	-0.109
TF_L2	0.023	0.028	RL_TF3	0.169	-0.028
FRC_L2	0.849	0.059	RL_TF4	0.280	0.107
TF_L3	0.060	0.212	RL_TF5	0.121	0.030
FRC_L3	0.853	-0.003	RL_HIP	0.056	0.040
TF_L4	0.390	0.043	RL_TEN	0.038	0.075
FRC_L4	0.817	0.079	RL_I	0.071	0.007
TF_L5	0.285	0.040	RL_II	0.159	-0.054
FRC_L5	0.744	0.124	RL_III	0.275	0.181
DTR_L	0.829	-0.005	RL_IV	0.201	0.056
DTR_10	0.878	-0.035	RL_T1	-0.165	0.192
SRC_L	0.957	0.040	RL_T2	-0.255	0.087
TRC_10	0.981	-0.009	RL_T3	-0.210	-0.033
			RL_TT	0.057	-0.021
			Expl.Var	13.22	10.66
			Prp.Totl	0.117	0.094

comb finger count (except for the I right finger) as well as the summary, total ridge count and delta index; factor f2 - should be defined as "the magnitude of the angle atd" (proportion of variance - 10.66 %) and includes in its structure only the magnitude of the angle atd of the right and left palms.

Discussion

Uzbek researchers have identified the relationship between the features of dermatoglyphics and personality traits. The results of the data processing showed a relationship between boys' bravery indices and the end of the main palmar line D on the left arm [4].

P. M. Polushkin et al. [21] created a system that allows an accurate portrait of a person to be portrayed with an accuracy of 85 % based on the fingerprints. In the work, boys and girls were divided into groups by temperament, after which they were conducted a dermatoglyphic study.

In recent years, factor analysis has become very popular in biomedical research, which allows us to quantify, for most of the traits under study, a relatively narrow set of properties that characterize associations between these traits and certain generalized factors [5].

When using factor analysis, it was found that, in practically healthy men of Ukraine, factors such as "ridge finger count" (13.22% dispersion angle) and "atd angle" (10.66% dispersion ratio) are most often associated with personality traits.

Analyzing the relationships obtained by the interdependence of personality traits (which have the highest predictive value in terms of human personality formation -

AZ_N, SP_ST, SP_LT, SH_EM, SH_T, SH_DM, SH_V, USK_1, USK_5, USK_7, LUS_1, LUS_2, LUS_7 and LUS_8) with dermatoglyphic indicators by factor analysis, it should be noted:

with *increasing* the indexes of the ridge count of the fingers (except for the I finger of the right hand), as well as the summary, total ridge counts (characterize the capacity of the patterns - normal, the more complex the pattern, the higher the ridge count [14]) and delta index (characterize the intensity of the ridge formation [14]) the degree of probability of growth of indicators Z_N, SP_ST, SP_LT, SH_EM, SH_V, USK_7, LUS_7 and LUS_8 *decreases* and SH_T, SH_DM, USK_1, USK_5, LUS_1, and LUS_2 - *increases*;

with *increasing* the magnitude of the angle atd (depends on the localization of the tri-radii a and d at the base of the fingers II and V and axial tri-radii t; consider that the decrease in the palmar angle reflects a decrease in viability and is associated with a number of diseases that exclude longevity [7]) on both palms the degree of probability of growth of indicators AZ_N, SP_ST, SP_LT, SH_EM, SH_T, SH_V, and LUS_1 *increases*, while SH_DM, USK_1, USK_5, USK_7, LUS_2, LUS_7, and LUS_8 - *decreases*.

Thus, the use of factor analysis made it possible to determine the most significant relationship between personality traits and dermatoglyphic indices.

Conclusions

1. When conducting factor analysis identified the main factors that have a significant impact on the characteristics of personality traits of practically healthy men - "ridge count of fingers" (proportion of variance - 13.22 %) and "the magnitude of the angle atd" (proportion of variance - 10.66 %).

2. Analysis of the obtained relationships of interdependence of indices of personality characteristics that have the most predictive value in terms of personality formation of a person with dermatoglyphic indices showed that with *increasing* indexes of ridge counts of fingers and delta index the degree of probability of *increase* in indices of neuroticism by the Eysenck, situational (reactive) and personal anxiety by Spielberger, accentuation of the character of the emotional and arousing types according to Shmishek, subjective control in the field of health and *diseases* by Rotter's, black and gray color according to Luscher decreases, and indicators of accentuation of the character of alarming and demonstrative types according to Shmishek, general internality of the level of subjective control and in the field of educational (professional) relations according to Rotter, blue and blue-green colors by Luscher - *increases*; as the magnitude of the angle atd increases on both palms, the degree of probability of growth of indicators of neuroticism according to Eysenck, situational (reactive) and personal anxiety according to Spielberger, accentuation of the character of the emotional, anxious and arousing types by Shmishek, blue color by Luscher *increase*, and indicators of accentuation of the

character of the demonstrative type by Shmishek, the general internality of the level of subjective control, in the field of educational (professional) relations and in the field

of health and illness according to Rotter, blue-green, black and gray color according to Luscher - *reduced*.

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ПРОГНОСТИЧНА ОЦІНКА АСОЦІЙОВАНOSTІ ДЕРМАТОГЛІФІЧНИХ ПОКАЗНИКІВ З ПОКАЗНИКАМИ ОСОБЛИВОСТЕЙ ОСОБИСТОСТІ, ВСТАНОВЛЕНА ФАКТОРНИМ АНАЛІЗОМ

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Резюме. Згідно з даними сучасної наукової літератури специфічні дерматогліфічні ознаки можуть бути діагностичними маркерами психічного стану людини. Мета роботи - виявити асоційованість дерматогліфічних показників з показниками особливостей особистості практично здорових чоловіків України. Із банку даних матеріалів науково-дослідного центру Вінницького національного медичного університету ім. М.І. Пирогова взяті первинні дерматогліфічні показники та анкети показників особливостей особистості 92 практично здорових чоловіків у третьому поколінні мешканців Вінницької, Хмельницької, частини Тернопільської та Житомирської областей. Обробку дерматогліфів проводили за методикою Cummins H. i Midlo Ch. (1961) у викладі Гладкової Т.Д. (1966). Для об'єктивної оцінки особливостей особистості практично здорових чоловіків було визначено ряд провідних показників, до складу яких віднесли цілий ряд властивостей темпераменту (за Айзенком), тривожності (за Спілбергером), акцентуованих рис особистості (за Шмішеком), мотиваційної спрямованості особистості (за Роттером), а також особливостей психоемоційної організації особистості, агресивності, рівня поширення астеничних і депресивних особистісних проявів (за кольорним тестом Люшера), які визначали на підставі використання особистісних опитувальників і тестових методик. Факторний аналіз проведений у ліцензійному пакеті "Statistica 6.1". Визначено головні чинники, які свідчать про асоційованість особливостей особистості практично здорових чоловіків з деякими дерматогліфічними показниками: "гребінцевий рахунок пальців кистей" (частка дисперсії - 13,22%) і "величина кута atd" (частка дисперсії - 10,66%). Аналіз отриманих взаємовідношень взаємозалежності показників особливостей особистості з дерматогліфічними показниками показав, що при збільшенні показників гребінцевих рахунків пальців кистей та дельтового індексу ступінь ймовірності зростання показників нейротизму за Айзенком, ситуативної та особистісної тривожності за Спілбергером, акцентуації

характеру емотивного й збудливого типів за Шмішеком, суб'єктивного контролю в галузі здоров'я та хвороби за Роттером, чорного і сірого кольору за Люшером зменшується, а показники акцентуації характеру тривожного і демонстративного типів за Шмішеком, загальної інтернальності рівня суб'єктивного контролю і в галузі навчальних (професійних) відносин за Роттером, синього і синьо-зеленого кольору за Люшером - збільшується. При збільшенні величини кута α на обох долонях ступінь ймовірності зростання показників нейротизму за Айзенком, ситуативної і особистісної тривожності за Спілбергером, акцентуації характеру емотивного, тривожного і збудливого типів за Шмішеком, синього кольору за Люшером збільшується, а показники акцентуації характеру демонстративного типу за Шмішеком, загальної інтернальності рівня суб'єктивного контролю, в галузі навчальних (професійних) відносин і в галузі здоров'я та хвороби за Роттером, синьо-зеленого, чорного і сірого кольору за Люшером - зменшується. Застосування факторного аналізу дало можливість визначити найбільш значущі взаємозв'язки показників особливостей особистості з дерматогліфічними показниками.

Ключові слова: дерматогліфічні показники, показники особливостей особистості, практично здорові чоловіки, факторний аналіз.

ПРОГНОСТИЧЕСКАЯ ОЦЕНКА АССОЦИИРОВАННОСТИ ДЕРМАТОГЛИФИЧЕСКИХ ПОКАЗАТЕЛЕЙ С ПОКАЗАТЕЛЯМИ ОСОБЕННОСТЕЙ ЛИЧНОСТИ, УСТАНОВЛЕННАЯ ФАКТОРНЫМ АНАЛИЗОМ

Серебрянникова О.А., Гунас В.И., Климас Л.А., Очеретная Н.П., Шаюк А.В.

Резюме. Согласно данным современной научной литературы специфические дерматоглифические признаки могут быть диагностическими маркерами психического состояния человека. Цель работы - выявить ассоциированность дерматоглифических показателей с показателями особенностей личности практически здоровых мужчин Украины. Из банка данных материалов научно-исследовательского центра Винницкого национального медицинского университета им. Н.И. Пирогова взяты первичные дерматоглифические показатели и данные анкет особенностей личности 92 практически здоровых мужчин в третьем поколении жителей Винницы, Хмельницкой, части Тернопольской и Житомирской областей. Обработку дерматоглифов проводили по методике Cummins H. и Midlo Ch. (1961) в изложении Гладковой Т.Д. (1966). Для объективной оценки особенностей личности практически здоровых мужчин был определен ряд ведущих показателей, в состав которых отнесли целый ряд свойств темперамента (по Айзенку), тревожности (по Спилбергеру), акцентуированных черт личности (по Шмишеку), мотивационной направленности личности (по Роттерому), а также особенностей психоэмоциональной организации личности, агрессивности, уровня распространения астенических и депрессивных личностных проявлений (по цветовому тесту Люшера), которые определяли на основе использования личностных опросников и тестовых методик. Факторный анализ проведен в лицензионном пакете "Statistica 6.1". Определены главные факторы, которые свидетельствуют об ассоциированности особенностей личности практически здоровых мужчин с некоторыми дерматоглифическими показателями: "гребешковый счет пальцев кистей" (доля дисперсии - 13,22 %) и "величина угла α " (доля дисперсии - 10,66 %). Анализ полученных взаимоотношений взаимозависимости показателей особенностей личности с дерматоглифическими показателями показал, что при увеличении показателей гребешковых счетов пальцев кистей и дельтового индекса степень вероятности роста показателей нейротизма по Айзенку, ситуативной и личностной тревожности по Спилбергеру, акцентуации характера эмотивного и возбуждающего типов по Шмишеку, суб'єктивного контролю в области здоровья и болезни по Роттеру, черного и серого цвета по Люшеру уменьшается, а показателей акцентуации характера тревожного и демонстративного типов по Шмишеку, общей интернальности уровня субъективного контроля и в области учебных (профессиональных) отношений по Роттеру, синего и сине-зеленого цвета по Люшеру - увеличивается. При увеличении величины угла α на обоих ладонях степень вероятности роста показателей нейротизма по Айзенку, ситуативной и личностной тревожности по Спилбергеру, акцентуации характера эмотивного, тревожного и возбуждающего типов по Шмишеку, синего цвета по Люшеру увеличивается, а показателей акцентуации характера демонстративного типа по Шмишеку, общей интернальности уровня субъективного контроля, в области учебных (профессиональных) отношений и в области здоровья и болезни по Роттеру, сине-зеленого, черного и серого цвета по Люшеру - уменьшается. Применение факторного анализа позволило определить наиболее значимые взаимосвязи показателей особенностей личности с дерматоглифическими показателями.

Ключевые слова: дерматоглифические показатели, показатели особенностей личности, практически здоровые мужчины, факторный анализ.