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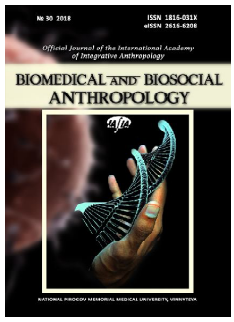

Regional trends indicators finger dermatoglyphics among modern Ukrainians

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The variability of fingerprints is widely used to identify a person in criminology, as a diagnostic-prognostic marker system in medicine and in the study of multi-vectored ethnogenetic processes in population surveys that cover different regions of the state. The purpose of the study is to outline the local structure of the male population of Ukraine by analyzing the indicators of digital dermatoglyphics for information on the vector of evolution of the local population. Dermatoglyphic study was performed using H. Cummins and Ch. Midlo for 400 practically healthy men from different administrative-territorial regions of Ukraine. Statistical processing of the obtained results was carried out in the package STATISTICA 6.1 using nonparametric methods. High heterogeneity was established on the basis of qualitative and quantitative indicators of signs of digital dermatoglyphics among the following administrative-territorial groups: between the inhabitants of central and southern (22.22% of indicators), central and eastern (20.37% of indicators) of central and western (15.74%), northern and southern (17.59% of indicators), northern and western (16.67% of indicators), northern and eastern (15.74% of indicators), western and eastern (12.04% of indicators) and southern and eastern (12.04% of indicators) of the regions of Ukraine. Significant homogeneity was detected in terms of qualitative and quantitative indicators of signs of digital dermatoglyphics inherent in men, residents of the northern and central regions of Ukraine (differences are recorded at 7 (6.48%) indicators, as well as men living in the southern and western regions of the country (differences are recorded for 10-9.26% of indicators of only qualitative characteristics.) The obtained results allowed to distinguish two dermatological complexes on the territory of Ukraine: local north-central and local south-western. High taxonomic the value for intra-population differentiation of the local level have: types of patterns with high intensity comb and the capacity of the pattern, especially the III and IV fingers of the right hand and I and II fingers of the left hand.

Keywords: *finger dermatoglyphics, practically healthy men, administrative and territorial regions of Ukraine.*

Introduction

The dermatoglyphics, a relatively young section of the morphology of man, beginning at the end of the XIX century, study of skin relief of the palmar side of the hand and the plantar surface of the foot of a person. Human skin figure is unique and does not change with age. If in the beginning the variability of fingerprints was used to identify a person in forensic science, then this methodology was used in the future as a diagnostic-prognostic marker system in medicine, for genetic diseases (Down syndrome, Shereshevsky-Turner, Lezhena, etc.), cardiovascular, respiratory system disorders, skin diseases. Only later scientists began to use knowledge of a skin pattern to study the evolutionary processes and genetic structure among populations in anthropology [4, 14].

Dermatological signs have been widely used throughout the world, especially in recent decades, to establish inter-population diversity [8, 10, 20].

For example, Hussein I. A. and Abdullah N. F. [6] investigated the features of dermatoglyphics among the population of the central region of Iraq. Subsequently, the results of the study were compared with earlier findings of the study in the southern regions of Iraq. If there was no difference between the data of the maximum angle of the fingerprints and the mean absolute angle of the fingerprints,

a significant difference ($t = 2.89$, $p < 0.01$) was found when evaluating the corn count on the third and fourth fingers of the right hand on the right hand.

The study of skin figure has gained considerable development in India, in which dozens of nationalities live [9, 15, 16]. Jami J. and Limbu D. K. defined the dermatological features of the ethnic group of Bokhi Hassi, who live in the Meghalaya Indian region. The results of processing fingerprint data of 232 representatives of this ethnic group revealed features that distinguish them from other ethnic groups living in the region, namely, a significant prevalence of the patterns of ulnar loops, the higher frequency of patterns, the specific localization of the delta, the formula of the middle line and completing the C-line. All this confirmed the guess of scientists about the proximity of this ethnos to such Mongoloid groups in the region as Phnarsy and Gary [7].

Studies by scientists from Liberia representatives of several tribes allowed to recreate the processes of migration of the local population [11]. In total, 427 people belonging to the Kwa, Mande and Mel tribes were examined. Significant differences in the asymmetry of the comb account and the Fst score are revealed.

It is also worth taking into account the numerous results of the work of Nigerian scientists, since over Nigerian territory is home to more than 250 tribes. Mohammed B., Garba S. H. and Adeyemi L. B. [13] studied the peculiarities of the skin patterns of the representatives of the Canuri tribes living in the north-eastern part of the country. It was found that the most frequent type of pattern in this tribe is loop (59.10%) and whorl (33.80%), scallop score is 122.6 for men and 115.5 for women; The pattern density index is higher in men than in women (12.85 and 12.49 respectively).

In another study, the peculiarities of the dermatological characteristics of the Ijdzhow tribes living in the region of the Niger River delta [14] are taken into account. In this tribe, the figure of the radial loop and ulnar loop is most often found. Other researched indicators - general finger comb scores, index of density of patterns, etc. did not differ from those of other neighboring tribes.

The team of scientists led by Ujaddughe M. O. [21] studied the features of the skin of the tribe of Yezan, who lives in the province of Edo in Nigeria. The frequency distribution of the patterns was found to be 61.7% loop, whorl 24.9%, arch 12.8%, double whorl 0.6%. The angle of atd was 43.49% for men, 44.02% for women; the tad was 75.11% and 74.71% respectively; the tda was 61.22% and 61.35% respectively.

However, not always, scientists can detect statistically significant differences in the characteristics of the skin pattern. For example, the study of Bulgarian scientists in order to identify the features of dermatological indicators among residents of the neighboring regions - Lyubimets and Svilengrada (102 men and 95 women and 91 people and 105 women were surveyed respectively) confirmed that the population of this region belongs to one group in connection with the extremely homogeneous data obtained as a result of the experiment [12].

The modern anthropological composition of the Ukrainian people, the formation and development of which took place in the contact area of groups of different anthropological affiliations, is a reflection of the complex multi-vector ethnogenetic processes that took place on its ethnic territory during the last millenniums. The study of peculiarities of dermatoglyphics indicators among the population of Ukraine was begun by Segeda S.P. in 2001 [17]. However, this study still remains a pity for a single population survey that covers various regions of our country.

Aim of work - outline the local structure of the male population of Ukraine by analyzing the indicators of finger dermatoglyphics to obtain information on the vector of the evolution of the local population.

Materials and methods

From the database of research center of the National Pirogov Memorial Medical University, Vinnytsya primary dermatological figures were taken from 400 practically healthy men between the ages of 19 and 35 in the third generation of inhabitants of the respective administrative-territorial regions of Ukraine [2]: 47 from the south (Odesa, Mykolaiv, Kherson, Zaporizhian regions and Autonomous Republic of Crimea), 165 from the central (Vinnytsia, Cherkasy, Kirovograd, Poltava and Dnipropetrovsk regions), 71 - from the western (Volyn, Rivne, Lviv, Chernivtsi, Ternopil, Khmelnytskyi, Zakarpattia and Ivano-Frankivsk regions), 45 - from the eastern (Kharkiv, Lugansk and Donetsk regions); 72 from the northern (Zhytomyr, Kyiv, Chernihiv and Sumy regions).

Preliminary to all surveyed by means of a special questionnaire the analysis of medical and social factors of living conditions and professional activity was carried out, the results of which established a fairly high homogeneity of samples of somatic healthy men from different regions of Ukraine [18].

Bioethics Committee of the National Pirogov Memorial Medical University, Vinnytsya found that the studies carried out did not contradict the basic bioethical norms of the Helsinki Declaration, the Council of Europe Convention on Human Rights and Biomedicine (1977), the relevant provisions of the WHO and the laws of Ukraine (Minutes № 8 of 10.09.2013).

Fingerprints were obtained using a printing ink on a sheet of paper [3]. The dermatological study was performed according to the method of H. Cummins and Ch. Midlo [1]. The analysis included 108 indicators of digital dermatoglyphics, of which 85 indicators were qualitative and 23 indicators related to quantitative characteristics. Statistical processing of the obtained results was carried out in the package "STATISTICA 6.1" using nonparametric methods.

Results

Among the practically healthy men of the *northern* and *southern* regions of Ukraine, the following reliable or trends

of the differences in the indicators of digital dermatoglyphics were established: among the qualitative indicators - in men of the northern region, the percentage of central pockets on the first finger was higher than that of the men in the southern region (36.1% vs. 19.1%, p <0.05), III finger (19.4% vs. 4.3% p <0.05) in the right hand, II finger (25.0% vs. 6.4%, p <0.01) left hand and IV finger as right (45.8% vs. 27.7%, p <0.05) and left (33.3% vs. 10.6%, p <0.01) brushes, ulnar loops on II finger of right (27.8% vs. 10.6%, p <0.05) of the brush, double loop on the left I finger (26.4% vs. 4.3%, p <0.01) of the brush, random pattern on the III finger of left (6.9% vs. 0.0%, p = 0.068) brushes, as well as a smaller percentage of the arc on the right III finger (13.9% versus 31.9%, p <0.05) of the brush and ulnar loop on IV finger of the left (31.9% against 48.9%, p = 0.065) brush; among the quantitative indicators - in the men of the northern region higher than in the men of the southern region, the value of the local comb account of the right-hand pattern of III finger (12.68±6.48 versus 9.128±7.058 comb, p<0.01), I finger (17.75±7,97 versus 14.55±7.55 comb, p<0.05) and the second finger (11.65±7.93 versus 8.83±7.97 comb, p = 0.061) of the left hand, IV finger as the right one (16.31±6.21 versus 14.02±6.50, p = 0.057) and the left (16.15±6,18 versus 13.64±6.21, p<0.05) brushes, as well as the delta index of the left hand (5.764±2.166 versus 5.043±2.167, p = 0.078), the total comb account as the right (72.49±25.96 versus 62.53±24.38 comb, p<0,05) and left hand (70.89± 27.40 vs. 60.09±23.97 comb, p<0.05) and total comb account (143.4±52.2 against 122.6±46.4 comb, p<0.05).

Among the practically healthy men of the *northern* and *central* regions of Ukraine, the following reliable or trends of the differences in the indicators of digital dermatoglyphics were established: among the qualitative indicators - in men of the northern region, the percentage of the central pocket on the first finger was higher than that of men in the central region (36.1% vs. 24.2%, p = 0.061), III finger (19.4% vs. 10.3% p = 0.057), IV finger (45.8% vs. 32.7%, p = 0.056), curls on the fifth finger (4.2% vs. 0.6%, p <0.05) of the right hand and a lower percentage of random pattern on the first finger (1.4% vs. 7.9%, p = 0.053) and ulnar loop on the second finger (23.6% vs. 36.4%, p = 0.0542) of the left hand; among asymmetry of qualitative and quantitative indicators - among asymmetry of qualitative indicators of reliable or trends of differences are not established; among the asymmetry of quantitative indices in men in the northern region is less than in men in the central region, the absolute value of the asymmetry of the comb count of the third finger (0.278±4.514 versus -1.133±4.908, p<0.05), asymmetry, on the contrary, is right-sided.

Among the practically healthy men of the *northern* and *western* regions of Ukraine, the following reliable or trends of the differences in the indicators of digital dermatoglyphics were found: among the qualitative indicators - men in the northern region have a higher percentage of central pockets of I finger than in the western region (36.1% vs. 22.5 %, p = 0.076) and III finger (19.4% and 7.0%, p <0.05) of the right hand, double loop on the first finger (26.4% vs. 11.3%, p <0.05)), a random pattern on the second finger (12.5% vs. 2.8%, p <0.05), the central pocket on the IV finger (33.3% vs. 16.9%, p <0.05) of the left hand, and also, a lower percentage of the ulnar loop on the right I fingers (37.5% vs. 56.3%, p <0.05) and the double loop on the V finger of the left brush (0.0% vs. 7.0%, p <0.05); among the quantitative indicators - in men of the northern region higher than in men of the western region, the value of the local comb score of the third finger pattern (12.68±6.48 versus 10.20± 6.12 combs, p <0.05), V finger (13.07±6.27 versus 10.94± 6.94 comb, p = 0.057) and the delta index (6.250±2.336 versus 5.479±2.242, p <0.05) of the right hand and IV right finger (16.31±6.21 versus 13.35±6.87 comb, p<0.01) and left (16.15±6.18 versus 13.90±5.83 comb, p<0.05) of the brushes, total comb account as right (72.49±25.96 versus 64.13±24.60 combs, p=0,051), and left (70.89±27.40 versus 62.92±24.85 comds, p = 0.071) of the brushes, and also the second finger (11.65±7.93 versus 9.268±7.264 combs, p = 0.063) of the left brush and total comb account (143.4± 52.2 versus 127.0±48.1 combs, p = 0.053); among asymmetry of qualitative and quantitative indicators - among asymmetry of qualitative indicators of reliable or trends of differences are not established; among the asymmetry of quantitative indices in men in the northern region is less than that of men in the western region, the absolute value of the asymmetry of the comb account of the II finger pattern (-0.500±5.470 versus 1.493±5.712, p<0.05), asymmetry, on the contrary, left-sided and third finger (0.278±4.514 vs. -1.662±4.790, p<0.05), asymmetry, on the contrary, is right-sided.

Among the practically healthy men of the *northern* and *eastern* regions of Ukraine, the following reliable or trends of differences in the indicators of finger dermatoglyphics were found: among the qualitative indicators - in men of the northern region, the percentage of central pockets on I finger was higher than that of men in the eastern region (36.1% vs. 13.3 %, p <0.01) and on the right finger (12.5% vs. 0.0%, p <0.05) of the brush, on the IV finger as the right one (45.8% vs. 24.4%, p < 0.05) and the left (33.3% vs. 8.9%, p <0.01) brushes and the III finger of the left (11.1% vs. 2.2%, p = 0.081) brushes and a random pattern on III finger (6.9% versus 0.0%, p = 0.074) of the brush, and also less than that of men in the eastern region, the percentage of arc on the right I finger (4.2% versus 13.3%, p = 0.075) brushes, ulnar loop on the I (37.5% vs. 55.6%, p = 0.058) and IV finger (22.2% vs. 37.8%, p = 0.071) of the right hand, on the third finger as the right one (50.0% vs. 66.7%, p = 0.079) and left (58.3% vs. 82.2%, p <0.01) brushes, on the left V finger (69.4% vs. 84.4%, p=0,070) brushes; among the quantitative indicators - in men of the northern region higher than in men of the eastern region, the value of the local comb count of the I-finger pattern as the right one (19.28±6.84 versus 15.78±7.35 comb, p <0.05), and left (17.75±7.97 versus 14.80±7.05 comb, p <0.05) of the brushes and the delta index as the right one (6.250±2.336 versus 5.378±2.242, p <0.05), so and left (12.01±4.31

versus 10.56±3.68, p = 0.063) brushes; among the asymmetries of qualitative and quantitative indicators, men of the northern region are more likely than men in the eastern region, for the importance of asymmetry according to the type of the second finger pattern (58.3% vs. 35.6%, p <0.02).

Among the practically healthy men of the *southern* and *central* regions of Ukraine, the following reliable or trends of the differences in the indicators of digital dermatoglyphics are established: among the qualitative indicators - in men of the southern region, the percentage of the curling on IV (17.0% vs. 4.2%, p <0.01), V finger (4.3% vs. 0.6%, p = 0.060) of the right hand, I finger on left (4.3% vs. 0.6%, p = 0.060) brushes, arches on the II finger as the right one (36.2% vs. 21.8%, p <0.05) and the left (36.2% vs. 18.2%, p <0.01) brushes, on the third fingers as the right (31.9% vs. 18.8%, p = 0.056), and left (25.5% vs. 13.9%, p = 0.060) brushes, as well as less than men in the central region, the percentage of ulnar loop on the second finger of the right (10.6% vs. 26.7%, p <0.05) brush, a random pattern on the IV finger of the right hand (8.5% vs. 20.6%, p = 0.058) brush and III (0.0% vs. 7.3%, p = 0,058) and V finger (6.4% vs. 17.0%, p = 0.071) of the left hand, double loop on the left I finger (4.3% vs. 18.2%, p <0.05) of the brush, central pocket on II (6.4 % vs. 17.6%, p = 0.06) and IV fingers (10.6% vs. 23.6%, p = 0.054) of the left hand; among the quantitative indicators - men of the southern region have less than men in the central region, value of the local comb count on the second finger as the right (9.426±7.917 versus 11.86±7.37 comb, p = 0.051) and the left (8.83±7.97 versus 11.88±7.06 comb, p <0.05) of the hands, III finger of the right as well (9.128±7.058 vs. 11.61±6.9 comb, p <0.05) left (10.36±6.82 against 12.74± 6.76 comb, p <0.05) of brushes, total comb account as right (62.53±24.38 against 71.69±24.75 comb, p <0.05) and left (60.09±23.97 versus 70.95±25.64 comb, p <0.05) brushes, as well as the first finger (14.55±7.55 versus 17.45± 7.61 comb, p <0.05) and IV fingers (13.64±6.21 versus 15.62±6.08 comb, p = 0.051) of the left brush, total combs count (122.6±46.4 versus 142.3±49.1 comb, p <0.02); among the asymmetries of qualitative and quantitative indicators - in men of the southern region more than men in the central region, the importance of asymmetry by the type of pattern of the first finger (61.7% vs. 46.7%, p = 0.071).

Among the practically healthy men of the *southern* and *western* regions of Ukraine, the following reliable or tendencies of the differences in the indicators of finger dermatoglyphics are established: only among the qualitative indicators - men of the southern region have larger than the men of the western region, the percentage of arc on the right I finger (10.6% vs. 2.8%, p = 0.081) and III fingers of the left (25.5% against 12.7%, p = 0.078) brush, double loop on the second fingers of the right (10.6% vs. 1.4%, p <0.05) brush, random pattern on the second fingers of the left (10.6% against 2.8%, p = 0.081) brush and ulnar loop on the V fingers (80.9% vs. 64.8%, p = 0.061) of the brush, and less than that of men in the western region, the percentage of arc on the right V fingers (4.3% vs. 19.7%, p <0.05) of the brush, ulnar loop on I (38.3% vs. 56.3%, p = 0.058) and II fingers (10.6% vs. 35.2%, p <0.01) of the right hand, central pocket on II fingers (6.4% vs. 23.9%, p <0.05) of the left hand, random pattern on the third finger (0.0% vs. 12.7%, p <0.05) of the left hand.

Among the practically healthy men of the *southern* and *eastern* regions of Ukraine, the following reliable or trends of differences in the indicators of digital dermatoglyphics were established: among the qualitative indicators - men of the southern region, than that of men in the eastern region have higher the percentage of the presence of a double loop on the right I fingers (19.1% versus 6.7%, p = 0.081) hand, the arches on the III fingers as the right (31.9% vs. 11.1%, p <0.02) and the left (25.5% vs. 6.7%, p < 0.02) brushes, the central pocket on the V fingers as the right one (8.5% versus 0.0%, p <0.05) and I left (19.1% vs. 4.4%, p <0.05) brushes as well less than that of men in the eastern region, the percentage of ulnar loop on the second fingers of the right (10.6% vs. 24.4%, p = 0.084), III fingers as right (46.8% vs. 66.7%, p = 0.057) and left (53.2% vs. 82.2%, p <0.01) brushes and central pockets on the II fingers (6.4% vs. 24.4%, p <0.02) of the left hand; among the quantitative indicators - in men of the southern region less than in men of the eastern region, the value of the local comb count of the third finger as the right (9.128±7.058 vs. 12.60±6.29 combs, p <0.02) and the left (10.36±6.82 versus 13.91±5.68 combs, p <0.01) of the brush and IV left finger (13.64±6.21 versus 16.38±5.16 combs, p <0.05) brushes; among the asymmetries of qualitative and quantitative indicators - in men of the southern region more than in men of the eastern region, the value of asymmetry in the comb number I finger (3.043±5.405 vs. 0.800±5.133, p <0.05).

Among the practically healthy men of the *central* and *western* regions of Ukraine, the following reliable or tendencies of the differences in the indicators of digital dermatoglyphics are established: among the qualitative indicators - in men of the central region, the percentage of the presence of a double loop on the right I finger is higher (21.8% versus 9.9%, p <0.05), and also less than that of men in the central region, the percentage of ulnar loop on the first fingers (36.4% vs. 56.3%, p <0.01) of the right hand, arches on the V fingers (8.5% vs. 19.7%, p <0.02) of the right brush and I fingers (18.2% vs. 32.4%, p <0.02) of the left hand and the double loop on the V fingers (1.2% vs. 7.0%, p <0.02) of the left hand; among the quantitative indicators - in men of the central region more than in men of the western region, the value of the local comb account of the pattern of the IV finger as the right one (15.49±6.12 versus 13.35±6.87 comb, p <0.02), and left (15.62±6,08 versus 13.90±5.83 comb, p <0.05) of the brushes, and the V fingers as the right one (13.70±5.59 versus 10.94±6.94 combs, p <0.01) and left (13.52±5.40 versus 11.85±6.52 comb, p <0.05) brushes, II fingers (11.88±7.06 versus 9.268±7.264 comb, p <0.05) of the left hand, total comb

account as the right one (71.69±24.75 versus 64.13±24.60 ridges, p <0.05), and left (70,95±25.64 vs. 62.92±24.85 comb, p <0,05) of brushes, total comb account (142.3±49.1 versus 127.0±48.1 scallops, p <0.05); among the asymmetries of qualitative and quantitative indicators, men in the central region are less likely than men in the western region, the importance of asymmetry according to the type of pattern I of the finger (46.7% vs. 62.2%, p <0.05) and more by the type of the V finger pattern (69.1% vs. 54.9%, p <0.05), as well as less absolute value of the asymmetry of the comb account of the second finger (-0.067±5.762 vs. 1.493±5.712, p = 0.057), asymmetry left-sided and the V finger (0.188±3.918 against -1.042±5.571, p = 0.054), the asymmetry is right-sided.

Among the practically healthy men of the *central* and *eastern* regions of Ukraine, the following reliable or tendencies of the differences in the indicators of digital dermatoglyphics were established: among the qualitative indicators - in men of the central region, was higher than that of men in the eastern region the percentage of the presence of a double loop on the right I fingers (21.8% versus 6.7%, p <0.05) brush, central pocket on the right V fingers (12.7% vs. 0.0%, p <0.02) of the brush, on I (15.2% vs. 4.4%, p = 0.057), III (10.9% vs. 2.2%, p = 0.073) and IV fingers (23.6% vs. 8.9%, p <0.05) of the left hand and a random pattern on III (7.3 % vs 0.0 %, p=0.063) and V fingers (17.0% vs. 4.4%, p <0.05) of the left hand, and less than the men of the eastern region, the percentage of the ulnar loop on the first finger the right (36.4% vs. 55.6%, p <0.05) of the brush, III (60.0% vs. 82.2%, p <0.01) and V fingers (70.3% vs. 84, 4%, p = 0.059) of the left hand, radial loop on IV (0.0% vs. 2.2%, p = 0.058) and V (0.0% vs. 2.2%, p = 0.058) of the left hand, arc on the I fingers of the right (4.8% vs. 13.3%, p <0.05) and II fingers left (18.2% vs. 31.1%, p = 0.061) of the brushes, curl on IV (4.2% against the 13.3%, p <0.05) and V fingers (0.6% vs. 4.4%, p = 0.057) of the right hand, I to the left fingers (0.6% vs. 4.4%, p = 0,057) brush, radial loop on IV (0.0% vs. 2.2%, p = 0.058) and V fingers (0.0% vs. 2.2%, p = 0.058) of the left hand; among the quantitative indicators - in men of the central region more than in men of the eastern region, the value of the local comb count of the pattern of the first finger as the right one (19.30±7.38 versus 15.78±7.97 comb, p <0.01), and left (17.45± 7.61 versus 14.80±7.05 comb, p <0.05) brushes; among the asymmetries of qualitative and quantitative indicators, men in the central region are less likely than men in the eastern region, the importance of asymmetry according to the type of pattern I of the finger (46.7% vs. 64.4%, p <0.05).

Among the practically healthy men of the *western* and *eastern* regions of Ukraine, the following reliable or trends of differences in the indicators of digital dermatoglyphics were established: among the qualitative indicators - in men of the western region, the percentage of the central pocket on the right V fingers is higher than that of men in the eastern region (7.0% vs. 0.0%, p = 0.072) brush, random pattern on the third finger (12.7% versus 0.0%, p <0.02) and double loop on the V fingers (7.0% vs. 0.0%, p = 0,072) of the left hand, and also less than that of men in the eastern region, the percentage of arc on I fingers of the right (2.8% against 13.3%, p <0.05) brush, ulnar loop on III (62.0% vs. 82.2%, p <0.05) and V fingers (64.8% vs. 84.4%, p <0.05) of the left hand; among the quantitative indicators - in the men of the western region more than in the men of the eastern region, the value of the local comb count of the right-hand pattern of I finger (18.87±6.21 versus 15.78±7.35 comb, p <0.05), as well as smaller - III fingers as the right (10.20±6.12 versus 12.60±6.29 comb, p <0.05) and the left (11.83 5.66 versus 13.91 5.68 comb, p = 0.056) of the brushes and IV finger as the right one (13.35±6.87 versus 16.22±6.23 comb, p <0.05) and left (13.90±5.83 against 16.38±5.16 comb, p <0,05) brushes; among the asymmetries of qualitative and quantitative indicators, men in the western region are less likely than men in the eastern region, the importance of asymmetry according to the type of pattern of the finger V (54.9% vs. 73.3%, p <0.05), as well as the greater importance of the asymmetry of the comb I finger count (2.887±4.924 vs. 0.800±5.133, p <0.05).

Discussion

Thus, we have established high heterogeneity in terms of qualitative and quantitative indicators of signs of digital dermatoglyphic among the following administrative-territorial groups (Fig. 1): between the inhabitants of central and southern (22.22% of indicators), central and eastern (20.37% of indicators), central and western (15.74% of indicators), northern and southern (17.59% of indicators), northern and western (16.67% of indicators), northern and eastern (15.74% of indicators), western and eastern (12, 04% of the indicators) and southern and eastern (12.04% of indicators) of the regions of Ukraine.

Also, significant homogeneity was found on qualitative and quantitative indicators of signs of digital dermatoglyphic (see Fig. 1), which is typical for men, residents of northern and central regions of Ukraine (differences are recorded for 7 (6.48%) indicators, as well as for men living in southern and western regions of the country (differences are recorded for 10-9.26% of the indicators of only qualitative characteristics).

The obtained results allowed us to distinguish two dermatological complexes on the territory of Ukraine: local north-central and local south-western.

For the *local north-central* dermatoglyphic complex, which is distributed both in the *northern* and *central* regions, and differs from the finger dermatoglyphic of men of the *western* region, characteristic are: patterns with high intensity of comb formation (central pocket, double loop) on the I fingers of the right hand, virtually no such a kind of patterns (double loops) on the V fingers of the left hand and a higher capacity of the pattern of the IV finger of both brushes, the pattern of the second finger of the left hand, manifested in

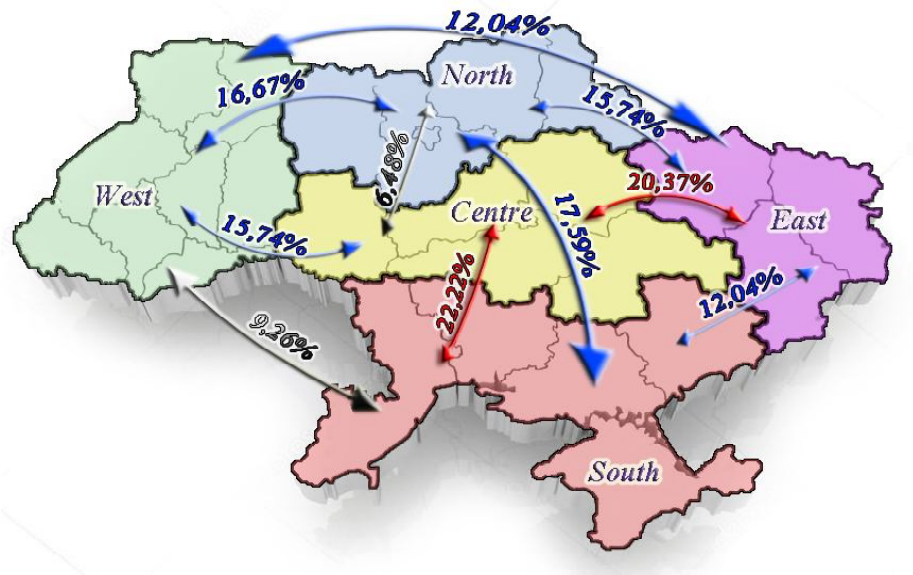

Fig. 1. Distribution of differences of administrative-territorial regions of Ukraine on the basis of finger dermatoglifics.

the background of less frequent localization of ulnar loop of I fingers of the right hand and is reflected in high rates of total comb account both the right and left hands, comb total account, and it had a left-sided asymmetry II account comb finger.

The local north-central dermatoglyphic complex is supplemented by the common features found in the men of the northern and central regions, which distinguishes them from the men of the *southern* region: these are patterns with average intensity of comb formation (ulnar loop) on the second finger of the right hand and the third finger of the left hand (random pattern), patterns with high intensity comb (double loop, central pocket) on the I, II and IV fingers of the left hand, accompanied by a higher capacity of the III finger pattern right hand and I, II and IV fingers of his left hand, and higher values of total and total comb accounts.

The common differences between the dermatoglyphics of the men of the north and the center and the dermatoglyphics of the men of the east, which include: the presence of a pattern with a high intensity of comb formation (central pocket, double loop) on the I and V fingers of the right and III and IV fingers of the left brush, the pattern of the average intensity of comb formation (random pattern) on the III fingers of the left brush, manifested in the background of less frequent localization of the ulnar loop and arc on the right I finger, ulnar loop on the III and V fingers of the left hand and are accompanied by a higher capacity of the pattern of the I finger of both the right and left brushes.

For a *local southwestern dermatological complex*, which is distributed in both the southern and western regions, and differs from the dermatoglyphics of men of the eastern region, the presence of a pattern with high intensity of comb formation (central pocket, double loop) on the V fingers of the right hand is characteristic appear on the background of a less frequent localization of the ulnar loop on the III fingers of the left hand and accompanied by a smaller capacity of the third finger pattern of both the right and left brushes and the IV left hand, more pronounced asymmetry of the comb account of the first finger.

The local southwestern dermatological complex is supplemented by the common features found in the men of the southern and western regions that distinguishes them from the men of the *central* region: the presence of a pattern with zero intensity of comb formation (arc) on the second finger of the left hand, accompanied by a smaller capacity of the pattern on II and IV fingers of the left hand and summary and total comb scores, as well as more pronounced asymmetry according to the type of the I-finger pattern.

The local southwestern dermatological complex of men has common features that distinguishes them from the men of the *northern* region: it is a smaller capacity of the pattern of the III and IV fingers of the right hand, the patterns of the II and IV fingers of the left hand and the total and total comb scores, which are manifested in the background of less frequent localization the central pocket on the right I finger.

Obviously, the heterogeneity of some regions and the affinity of others in terms of digital dermatoglyphic are reflected in the migration processes of both ancient and modern history, the sociopolitical dismemberment of the Ukrainian ethnic territory in the past, the ratio of impurities of other nationalities, the level of population urbanization and the nature of reproduction (ratio endogamous and exogamous marriages), the activity of ethno-cultural relations, which significantly differs from region to region.

Segeda S. P. [17], in the process of studying the differentiation of the population of Ukraine according to the data of dermatoglyphic, has established three variants of dermatoglyphic: southern, central and northern. We compared the territorial prevalence of these variants of dermatology with the location of the administrative-territorial regions we studied. It was found that in the northern administrative-territorial region all three dermatoglyphic variants are distributed by Segeda S. P., and in the central one there are two: central and southern. Therefore, the similarity of the dermatoglyphics of the central and northern administrative-territorial regions, established by us, is apparently due to a significant proportion of central and southern variants of dermatology in the northern region. The similarity of finger dermatoglyphics by quantitative indicators in the southern and western regions also finds its explanation in the work of Segeda S. P. [17], since the southern variant of dermatoglyphic is recorded in the first

region, while in the latter, although the northern and central complexes prevail, however, the similarity of dermatoglyphics of these two regions make a contribution of the dermatoglyphics of the Carpathians, which is the western branch of the southern dermatoglyphic complex of Ukraine.

The presence of several dermatological complexes in the ethnic territory is interpreted by Shirobokov I. G. [19] as a result of the mixed composition of the present-day population, the formation of which was attended by anthropological components of various origins.

Data analysis of signs of digital dermatoglyphics can be a useful tool for studying the relativity / variability among the indigenous population, as well as supplement the forensic medical criteria for the identification of men from different regions of Ukraine.

Conclusions

1. High phenotypological heterogeneity was established on qualitative and quantitative indicators of signs of digital dermatoglyphic for a number of administrative-territorial groups: between the inhabitants of central and southern (22.22% of indicators), central and eastern (20.37% of indicators), central and western (15.74%), northern and southern (17.59% of indicators), northern and western (16.67% of indicators), northern and eastern (15.74% of indicators), western and eastern (12.04% of indicators) and southern and eastern (12.04% of indicators) of the regions of Ukraine.

2. High taxonomic value for intra-population differentiation of the local level have: types of patterns with high intensity of comb formation and capacity of the pattern, especially III and IV fingers of the right hand and I and II fingers of the left hand.

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РЕГІОНАЛЬНІ ТЕНДЕНЦІЇ ПОКАЗНИКІВ ПАЛЬЦЕВОЇ ДЕРМАТОГЛІФІКИ СЕРЕД СУЧАСНИХ УКРАЇНЦІВ

Мінливість відбитків пальців та долонь широко застосовується для ідентифікації особи в криміналістиці, як діагностично-прогностична маркерна система в медицині та при вивченні багатовекторних етногенетичних процесів при популяційних дослідженнях, що охоплюють різні регіони держави. Мета дослідження - окреслити локальну структуру чоловічого населення України за допомогою аналізу показників пальцевої дерматогліфіки для отримання інформації щодо вектору еволюції місцевого населення. Проведено дерматогліфічне дослідження за методикою H. Cummins і Ch. Midlo 400 практично здорових чоловіків із різних адміністративно-територіальних регіонів України. Статистична обробка отриманих результатів проведена в пакеті "STATISTICA 6.1" з використанням непараметричних методів. Встановлена висока гетерогенність за якісними і кількісними показниками ознак пальцевої дерматогліфіки між рядом наступних адміністративно-територіальних груп: між мешканцями центрального і південного (22,22 % показників), центрального і східного (20,37 % показників) центрального і західного (15,74 % показників), північного і південного (17,59 % показників), північного і західного (16,67 % показників), північного і східного (15,74 % показників), західного і східного (12,04 % показників) та південного і східного (12,04 % показників) регіонів України. Виявлена значна гомогенність за якісними і кількісними показниками ознак пальцевої дерматогліфіки, що притаманна чоловікам, мешканцям північного і центрального регіонів України (відмінності фіксуються за 7 (6,48 %) показниками, а також чоловікам, що мешкають у південному та західному регіонах країни (відмінності фіксуються за 10-9,26 % показниками лише якісних ознак). Отримані результати дали змогу виділити два дерматогліфічні комплекси на території України: локальний північно-центральний і локальний південно-західний. Високу таксономічну цінність для внутрішньопопуляційної диференціації локального рівня мають: типи візерунків з високою інтенсивністю гребенеутворення та ємність візерунку, особливо III і IV пальців правої кисті та I і II пальців лівої кисті.

Ключові слова: *пальцева дерматогліфіка, практично здорові чоловіки, адміністративно-територіальні регіони України.*

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РЕГИОНАЛЬНЫЕ ТЕНДЕНЦИИ ПОКАЗАТЕЛЕЙ ПАЛЬЦЕВОЙ ДЕРМАТОГЛИФИКИ СРЕДИ СОВРЕМЕННЫХ УКРАИНЦЕВ

Изменчивость отпечатков пальцев и ладоней широко применяется для идентификации лица в криминалистике, как лечебно-прогностическая маркерная система в медицине и при изучении многовекторных этногенетических процессов при популяционных исследованиях, охватывающих различные регионы страны. Цель исследования - определить локальную структуру мужского населения Украины с помощью анализа показателей пальцевой дерматоглифики для получения информации относительно вектора эволюции местного населения. Проведено дерматоглифическое исследование по методике H. Cummins и Ch. Midlo 400 практически здоровых мужчин из разных административно-территориальных регионов Украины. Статистическая обработка полученных результатов проведена в пакете "STATISTICA 6.1" с использованием непараметрических методов. Установлена высокая гетерогенность по качественным и количественным показателям признаков пальцевой дерматоглифики между рядом следующих административно-территориальных групп: между жителями центрального и южного (22,22% показателей), центрального и восточного (20,37% показателей) центрального и западного (15,74% показателей), северного и южного (17,59% показателей), северного и западного (16,67% показателей), северного и восточного (15,74% показателей), западного и восточного (12,04% показателей) и южного и восточного (12,04% показателей) регионов Украины. Обнаружена значительная гомогенность по качественным и количественным показателям признаков пальцевой дерматоглифики, присущая мужчинам, жителям северного и центрального регионов Украины (различия фиксируются за 7 (6,48%) показателями, а также мужчинам, проживающих в южном и западном регионах страны (различия фиксируются за 10-9,26% показателями только качественных признаков). Полученные результаты позволили выделить два дерматоглифических комплексы на территории Украины: локальный северо-центральный и локальный юго-западный. Высокую таксономическую ценность для внутренне популяционной дифференциации локального уровня имеют: типы узоров с высокой интенсивностью гребенеобразования и емкостью узора, особенно III и IV пальцев правой кисти и I и II пальцев левой кисти.

Ключевые слова: *пальцевая дерматоглифика, практически здоровые мужчины, административно-территориальные регионы Украины.*