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## FEATURES OF FINGER DERMATOGLYPHICS IN MEN PRONE TO SEXUAL CRIMES

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**Abstract.** The article presents the data obtained during the study of the finger dermatoglyphs of persons who have committed sexual crimes, since there are currently no scientific works that would reflect the relationship between the manifestations of the phenotype (in particular, dermatoglyphic signs) in persons prone to crimes of the specified type.

**The aim of the study** is to determine the complex of dermatoglyphic parameters of the fingers that make up the dermatoglyphic constitution of persons who have a propensity for sexual crimes (rape).

**Material and methods.** Two groups of persons were studied: 1st group – corpses of persons who committed sexual crimes (50 persons); 2nd group - persons of the control group (50 persons).

**Research methods:** dermatoglyphic, statistical analysis.

**Results.** It was established that the frequency of radial loops on the left hand was 59.60% in rapists against 22.67% in CG, on the right - 56.80% against 19.56%, respectively; of ulnar loops - 3.20% versus 37.78% on and 3.60% versus 40.00% on the left, the frequency of arcs - 14.40% versus 4.44% on the left and 12.00% versus 5.33% on the right. Rapists had radial loops on the first fingers of the left and right hands most often - 44.00% and 42.00%, respectively, curls (26.00% and 38.00%) and complex patterns (22.00% and 18.00%), ulnar loops – in 2.00% on both hands, arcs – in 6.00% on the left hand and did not occur on the right; on the II fingers of the arc - 34.00% on the left and 32.00% on the right hands, radial loops (30.00% and 24.00%) and curls (20.00% and 26.00%), ulnar loops (8.00% and 10.00%), complex patterns (8.00% each); on the III finger - radial loops (68.00% and 70.00%) and arcs (18.00% on both hands), spiral patterns (10.00% and 4.00%), ulnar loops and complex patterns on 2.00%; radial loops (72.00% and 70.00%) and spiral patterns (16.00% and 24.00%) were most often found on the IV fingers of both hands, other patterns - 2.00% each; on V finger radial loops 84.00% and 78.00%, other patterns - from 2.00% to 8.00%. In CG, ulnar loops were most often found on I, III and V fingers of both hands (35.56%, 40.00% and 53.55%), and on II, IV – spiral patterns (33.33% and 47.78%) and ulnar loops (30.00% and 35.55%); there were no arcs on IV and V fingers. A statistically significantly higher number of radial loops in rapists than in CG men was established on the fingers of both hands except for II, arcs except for III, a smaller number of ulnar loops on all fingers of both hands and curls on IV and V fingers ( $p < 0, 01$ ).

**Conclusions.** In the course of the study, the presence of phenotypic (dermatoglyphic) signs characteristic of persons prone to sexual crimes was established:

1. The structure of digital dermatoglyphics is dominated by radial loops, rarely complex patterns and ulnar loops.
2. The peculiarities of homolateral symmetry were revealed: mostly there are 2-3 types of patterns in various combinations; radial loops prevail on the I fingers of both hands, arcs and complex patterns are rare; on II fingers - arcs, radial loops and curls prevail, rarely - ulnar loops and complex patterns; complex patterns and radial loops predominate on III-V fingers.
3. Features of bilateral symmetry are not revealed.
4. The values of the comb count I of the fingers of both hands in persons who have committed sexual crimes are statistically significantly ( $p < 0.001$ ) different from the values of this in the control group.
5. The values of the delta score of the fingers of the left and right hands of rapists and men of the control group do not differ.

**Keywords:** Forensic medicine, dermatoglyphics, sexual crimes.

**Introduction.** The fact that a person's phenotypic and psychotypic features are a manifestation of his genotype is undeniable. The presence of such a connection allows scientists to predict the manifestation of certain signs, including diseases or behavioral features, based on available phenotypic data. One of the manifestations of the phenotype, which is strictly individual, unchanged throughout a person's life, is easily amenable to study and systematization, is the dermatoglyphic status of a person [1-4].

One of the most serious crimes that one person can commit against another is sexual crimes. According to the Criminal Code of Ukraine, sexual crimes are classified

as crimes against sexual freedom and sexual integrity of a person. They include:

- Rape (Article 152 of the Criminal Code of Ukraine);
- Forcible satisfaction of sexual passion in an unnatural way (Article 153 of the Criminal Code of Ukraine);
- Forcing to enter into sexual intercourse (Article 154 of the Criminal Code of Ukraine);
- Sexual intercourse with a person who has not reached sexual maturity (Article 155 of the Criminal Code of Ukraine);
- Corruption of minors (Article 156 of the Criminal Code of Ukraine).

**Research rationale.** Research was conducted around the world that tried to establish a connection between a person's dermatoglyphic status and his propensity for certain crimes. In particular, a study by Stephanie R Ramirez, Elizabeth L Jeglic, and Cynthia Calkins (2015) found a link between childhood abuse, anger, and violent behavior in individuals convicted of child sexual abuse or molestation [6].

A study by Ozor Nwafia Chinyere Pricilla, Emelobe Chidiebele Samuel, Igbigbi Patrick Sunday (2018) aimed to identify dermatoglyphic patterns associated with criminal traits among women in Anambra State [5].

The purpose of the study by Indira P Sudha, Jyoti Singh, G S Sodhi was to establish a significant difference between the distribution of fingerprint patterns on each finger of the right and left hands [7].

Usman Shahid Butt, Anam Iqbal, Nasreen Akhtar, Sara Qazi, Zaryab Ali, Rahat Abdul Rahman (2021) conducted a comparative study of the dermatoglyphics of convicted felons (murder, sexual assault, and kidnapping) and a control group. When comparing the thumb of the right hand of convicted criminals with the general population, it turned out that the number of loops in unconvicted people is greater. In contrast to loops, which were higher in the general population, curls were more in the right hand of convicts [8]. Maninder Kaur, Mankamal Kaur, Preet Kamal, Jatinder Kaur (2019) found that in male criminals, the overall frequency of loops (56.51%) was maximum compared to the frequency of curls (38.79%) and arcs (4.7%), while in the control group men had the highest frequency of curls (48.25%) [9].

However, to date, there are no scientific works that would reflect the relationship of phenotypic manifestations in persons prone to illegal actions of varying degrees of severity, in particular, dermatoglyphic signs of all phalanges of fingers and palms. The aim of the study is to determine the complex of dermatoglyphic parameters of the fingers that make up the dermatoglyphic constitution of persons who have a propensity for sexual crimes (rape).

**The aim of the study.** To determine the complex of dermatoglyphic parameters of the fingers that make up the dermatoglyphic constitution of persons who have a propensity for sexual crimes (rape).

**Material and methods.** Two groups of persons were studied: 1st group – corpses of persons who committed sexual crimes (50 persons); 2nd group - persons of the control group (50 persons).

**Research methods:** dermatoglyphic, statistical analysis. The dermatoglyphic relief on the distal, middle and proximal phalanges of the hands and feet is formed by papillary lines. Three main types of simple patterns are distinguished on the distal, middle and proximal phalanges of the fingers and subdigital pads: arc (A), ulnar loop (Lu) or radial (Lr) and curl (W).

Impressions of all phalanges of each finger of both hands and palms were obtained using printing ink on a sheet of paper (A4) according to the generally accepted technique of "typing ink". The material support consisted of a rubber mat, glass measuring 15x25 cm; a glass stick and an ordinary rubber roller for applying and rolling paint on glass; typographic black paint, turpentine for dissolving

paint, as well as its removal from palms, cotton wool, soap and water for cleaning them. Palm and finger prints were simultaneously obtained on one sheet of paper, and the latter were rolled to the side of the corresponding palm print in a certain order: from left to right I, II, III, IV and V fingers of each hand. Dermatoglyphs were processed according to the method of V.I. Gunas, 2020.

In parallel, dermatoglyphs of the fingers of both hands were obtained using Futronic's FS80 USB 2.0 scanner. according to the methods of Kozan N.M. (2018) and Yu.Z. Kotsyubynska, 2021 (Fig. 2). This scanner is compatible with all modern operating systems (Windows, Linux, MAC OS, Android), and a standard USB port is enough to connect it. The software required for the full functionality of the scanner can be installed by downloading from the manufacturer's website. The scanner is capable of capturing fingerprints and creating images of 480x320 pixels (500 DPI). The size of the scanning window is 16x24mm, with a glass thickness of 14mm, which confirms its reliability and gives it advantages over any other semiconductor type sensors.

To capture images, the scanner uses four multi-directional infrared LED lamps that automatically change the radiation intensity depending on the characteristics of the scanned finger (wet, dry, dirty, etc.) to optimize the quality of the recorded fingerprint image.

Images obtained using the Futronic FS 80 scanner are usually of high quality and allow qualitative and quantitative study of papillary pattern elements. But in case of damage to the skin of the examined fingers, operator errors and other unforeseen cases, there is a need for additional image processing.

We used the Fingerprint identification algorithm (FIA) to enhance the images. The main task of this software is to convert a raster image into a vector image. When converting a raster image to a vector image, errors related to the incorrect interpretation of the pixel matrix data can often be assumed. In this case, choosing an algorithm (or software tool) that is suitable for image processing is extremely important, as it minimizes the probability of receiving errors when processing dermatoglyphic scans.

Different methods of univariate and multivariate statistical analysis were used to assess the relationships between variables. All data obtained directly during the study were recorded and structured in digital format using Microsoft Excel spreadsheets based on the Windows operating system. Statistical calculations were performed using the STATISTICA 12 for Windows software package (license number ZZS999000099100363DEMO-L).

**Results.** The analysis of the dermatoglyphs of the fingers of the rapists showed that radial loops are found on the fingers of both hands with almost the same frequency - in 59.60% and 56.80% of cases on the left and right hands, respectively, the second most frequent occurrence are curls - in 15.20% and 20.40%, respectively, on the left and right hands, approximately the same number of arcs (14.40% and 12.00%, respectively), complex patterns are less common - in 7.60% and 7.20% on the left and right hands respectively, and ulnar loops - in 3.20% and 3.60% on the left and right hands, respectively

After statistical processing of the dermatoglyphs of the fingers of the rapists, it was established that the patterns on the right and left hands do not differ in terms of total frequency.

The analysis of the corresponding dermatoglyphs of the fingers of ordinary men showed that on the fingers of both hands the most frequent ulnar loops (37.78% and 40.00% on the left and right hands), curls (24.44% and 28.44%, respectively) and radial loops (22.67% and 19.56%, respectively), complex patterns (10.67% and 6.67%, respectively) and arcs (4.44% and 5.33%, respectively) are less common. No difference in the distribution of drawings on the right and left hands was found even at the level of a statistical trend.

A comparative analysis with the corresponding dermatoglyphs of the fingers of ordinary men showed statistically significant differences in the frequency of occurrence of such types of patterns as radial and ulnar loops on the fingers of both hands, as well as arcs. Thus, the frequency of radial loops on the left hand was 59.60% in rapists against 22.67% in CG ( $\varphi = 3.75$ ;  $p < 0.001$ ), on the right – 56.80% against 19.56%, respectively ( $\varphi = 3.85$ ;  $p < 0.001$ ); ulnar loops – 3.20% versus 37.78% on the left ( $\varphi = 4.69$ ;  $p < 0.001$ ) and 3.60% versus 40.00% on the left ( $\varphi = 4.81$ ;  $p < 0.001$ ), frequency arches – 14.40% versus 4.44% on the left ( $\varphi = 1.72$ ;  $p < 0.05$ ) and 12.00% versus 5.33% on the left ( $\varphi = 1.63$ ;  $p < 0.05$ ), the frequency of curls and complex patterns among representatives of both groups did not differ statistically significantly.

With regard to the distribution of patterns on different fingers of the same person, it can be noted that rapists on the 1st fingers of the left and right hands most often had radial loops – 44.00% and 42.00%, respectively, less often curls (26.00% and 38.00%, respectively) and complex patterns (22.00% and 18.00%, respectively), ulnar loops – 2.00% on both hands, arches – 6.00% on the left hand and did not occur at all on this finger of the right hand; arcs were most often found on the II fingers – 34.00% on the left and 32.00% on the right hands, as well as radial loops (30.00% 24.00%, respectively) and curls (20.00% 26.00%, respectively), less often – ulnar loops (8.00% and 10.00%, respectively), complex patterns (8.00% each); radial loops (68.00% and 70.00% on the left and right hands, respectively) and arcs (18.00% on both

hands) were most often found on the III finger, curl patterns on this finger were found in 10.00% on the left and 4.00% on the right hands, ulnar loops and complex patterns were found equally on each hand – an average of 2.00%; radial loops (72.00% and 70.00% on the left and right hands, respectively) and spiral patterns (16.00% and 24.00% on the left and right hands, respectively) were most often found on the IV fingers of both hands, the frequency of other patterns on this finger averaged 2.00%; on the V finger, the frequency of patterns such as radial loops was 84.00% and 78.00% on the left and right hands, respectively, all other patterns occurred on average between 2.00% and 8.00%.

In the men of the control group, ulnar loops were most often found on I, III and V fingers of both hands (35.56%, 40.00% and 53.55%), and on II, IV – curled patterns (33.33% and 47, 78%) and ulnar loops (30.00% and 35.55%); there were no arcs on IV and V fingers.

It should be noted that in the group of rapists there was no statistically significant difference in the distribution of the total frequency of patterns on the right and left hands ( $\chi^2 = 4.35$ ,  $p > 0.1$ ), as well as in men of CG.

It should also be noted that rapists have a statistically significantly higher number of radial loops than CG men on the fingers of both hands, with the exception of II ( $\varphi I = 2.20$ ;  $\varphi III = 4.30$ ;  $\varphi IV = 6.17$ ;  $\varphi V = 5.55$ ;  $p < 0.01$ ), arches with the exception of the III finger ( $\varphi I = 2.43$ ;  $\varphi II = 3.55$ ;  $\varphi IV = 2.82$ ,  $\varphi V = 2.43$ ,  $p < 0.01$ ), as well as a smaller number of ulnar loops on all fingers of both hands ( $\varphi I = 4.88$ ;  $\varphi II = 2.70$ ;  $\varphi III = 5.33$ ;  $\varphi IV = 4.88$ ;  $\varphi V = 6.65$ ;  $p < 0.001$ ) and curls on IV and V fingers ( $\varphi IV = 2.68$ ;  $\varphi V = 3.10$ ,  $p < 0.01$ ).

In one person, representatives of both the rapists and the control group, two or three types of patterns in various combinations were found on the fingers of both hands.

The Shapiro-Wilk test was used to check for normality. This test tests the null hypothesis that the distribution of the trait does not differ from the theoretically expected normal distribution (Tabl. 1-2).

**Table 1**  
**The results of assessing the normality of the distribution for indicators of the ridge count of the fingers of the hands of rapists**

	Tests of Normality					
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
RCLHT_Raper	.096	50	.200*	.974	50	.320
RCLHI_Raper	.085	50	.200*	.969	50	.202
RCLHM_Raper	.083	50	.200*	.969	50	.202
RCLHR_Raper	.100	50	.200*	.983	50	.697
RCLHL_Raper	.099	50	.200*	.981	50	.584
TRCLH_Raper	.077	50	.200*	.975	50	.350
RCRHT_Raper	.084	50	.200*	.959	50	.051
RCRHI_Raper	.091	50	.200*	.959	50	.051
RCRHM_Raper	.091	50	.200*	.959	50	.051
RCRHR_Raper	.084	50	.200*	.973	50	.300
RCRHL_Raper	.111	50	.172	.955	50	.050*
TRCRH_Raper	.086	50	.200*	.987	50	.844

**Note:** a. Lilliefors Significance Correction; \*. This is a lower bound of the true significance.

Table 2

The results of assessing the normality of the distribution for indicators of the ridge count of the fingers of men of the CG

	Tests of Normality					
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
RCLHT_CG	.106	45	.200*	.955	45	.053
RCLHI_CG	.107	45	.200*	.958	45	.100
RCLHM_CG	.085	45	.200*	.958	45	.100
RCLHR_CG	.068	45	.200*	.958	45	.100
RCLHL_CG	.062	45	.220	.953	45	.050*
TRCLH_CG	.079	45	.200*	.965	45	.195
RCRHT_CG	.109	45	.200*	.959	45	.111
RCRHI_CG	.103	45	.200*	.959	45	.102
RCRHM_CG	.106	45	.200*	.953	45	.052
RCRHR_CG	.110	45	.200*	.973	45	.371
RCRHL_CG	.103	45	.200*	.958	45	.100
TRCRH_CG	.103	45	.200*	.954	45	.052

Note: a. Lilliefors Significance Correction;\*. This is a lower bound of the true significance.

As can be seen from the table. 1-2, the values of the Shapiro-Wilk test (Shapiro-Wilk) for indicators of the comb count of the fingers of rapists range from 0.953 to 0.973. This means that with a probability of 95.3-97.3%, the distribution of the data of the ridge count of the rapists' fingers is normal. In men, the values of the Shapiro-Wilk criterion range from 0.953 to 0.973, which also indicates the normality of the data distribution.

To clarify the statement, the Kolmogorov-Smirnov consistency criterion was also used. For the Kolmogorov-Smirnov criterion, it is rejected at the level of  $p \geq 0.20$ .

The Kolmogorov-Smirnov clarifying (control) criterion confirms our assumption about the normality of

the distribution - the p-level (Sig.) of this criterion is greater than 0.20, with the exception of the ridge score of the little finger of the right hand.

The results of the normality assessment were also checked graphically. Similar indicators were determined for the total delta score of the left and right hands.

Since the probability of validity of this hypothesis P (Sig.) turned out to be less than 0.05 for each of the indicators, we assume that the distribution of signs differs from the normal one, which is also confirmed by the value of the Kolmogorov-Smirnov test. Distribution histograms are also useful for confirming the assessment of normality of the distribution (Fig. 1).

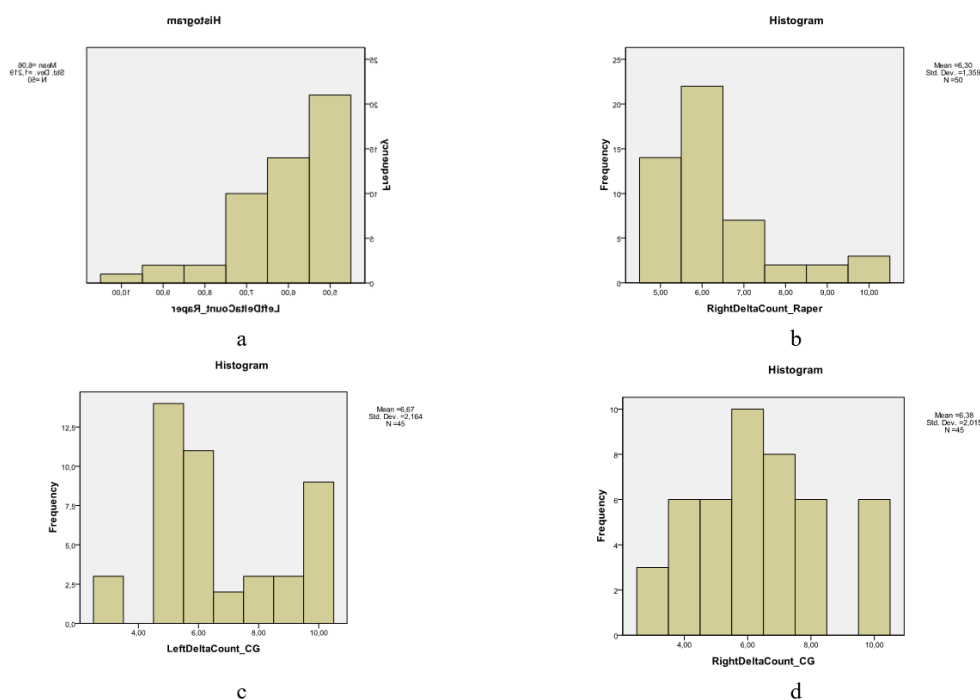


Fig. 1. Histograms of the distribution of variables of the total delta count of the fingers of rapists and men of CG: LeftDeltaCount – the total delta count of the fingers of the left hand; RightDeltaCount – the total delta count of the fingers of the right hand; CG is the control group.

Graphical analysis confirms the hypothesis that the distribution of the variables of the total delta count of the fingers is different from the normal one.

The values of the indicators of the ridge counts of the fingers of rapists and men of CG are presented in the table 3.

Table 3

Statistical indicators of the ridge counts of the fingers of rapists

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
RCLHT	50	20.00	14.00	34.00	23.4600	.71154	5.03137
RCLHI	50	16.00	12.00	28.00	17.3000	.49590	3.50655
RCLHM	50	20.00	9.00	29.00	17.7400	.53894	3.81089
RCLHR	50	19.00	10.00	29.00	19.7000	.54003	3.81859
RCLHL	50	18.00	9.00	27.00	18.3600	.55752	3.94224
TRCLH	50	83.00	55.00	138.00	97.2200	2.10738	14.90143
RCRHT	50	21.00	16.00	37.00	24.6800	.70476	4.98340
RCRHI	50	24.00	10.00	34.00	18.5800	.69169	4.89102
RCRHM	50	12.00	14.00	26.00	17.8600	.41306	2.92079
RCRHR	50	19.00	11.00	30.00	20.1200	.58807	4.15830
RCRHL	50	20.00	11.00	31.00	18.1400	.52993	3.74716
TRCRH	50	62.00	69.00	131.00	99.3800	1.99957	14.13909
Valid N (listwise)	50						

Since the distribution of the values of the ridge counts of the fingers corresponds to a normal distribution, the Student's t-test for independent samples can be used for comparative analysis.

For the values of the Cstudent criterion, Sig. (2-tailed) for ridge counts of all fingers is greater than 0.05. This means that the hypothesis of the equality of means is accepted, that is, it can be said that the mean values of the

ridge counts of the fingers of the left and right hands of the rapists do not differ.

We will carry out similar calculations for men of CG (Table 4).

We will conduct a comparative analysis of the ridge counts of the fingers of the left and right hands of rapists and men of CG (Table 5).

Table 4

Statistical indicators of ridge counts of the fingers of men of the CG

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
RCLHT_CG	45	20.00	10.00	30.00	19.3111	.96704	6.48713
RCLHI_CG	45	33.00	.00	33.00	16.3556	1.39340	9.34723
RCLHM_CG	45	32.00	.00	32.00	13.4000	1.37598	9.23038
RCLHR_CG	45	23.00	5.00	28.00	18.6444	.97812	6.56144
RCLHL_CG	45	25.00	4.00	29.00	14.3778	.93974	6.30400
TRCLH_CG	45	113.00	27.00	140.00	82.0889	4.35946	29.24413
RCRHT_CG	45	34.00	.00	34.00	18.8667	1.14662	7.69179
RCRHI_CG	45	45.00	.00	45.00	16.3111	1.83865	12.33403
RCRHM_CG	45	35.00	.00	35.00	14.8667	1.45456	9.75751
RCRHR_CG	45	32.00	3.00	35.00	19.5778	1.22988	8.25031
RCRHL_CG	45	29.00	.00	29.00	12.5333	1.04717	7.02463
TRCRH_CG	45	147.00	27.00	174.00	82.1556	4.98907	33.46773
Valid N (listwise)	45						

**Table 5**  
**Value of the Student's t-test for the values of the ridge counts of the fingers in the group of male rapists of the CG**

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
RCLHT	2.583	.111	3.502	93	.001	4.4889	1.18482	1.79607	6.50171
RCLHI	38.346	.000	.665	93	.508	.94444	1.42087	-1.87712	3.76600
RCLHM	22.528	.000	3.050	93	.003	4.34000	1.42304	1.51413	7.16587
RCLHR	22.095	.000	.970	93	.335	1.05556	1.08830	-1.10560	3.21671
RCLHL	8.824	.004	3.730	93	.000	3.98222	1.06752	1.86235	6.10210
RCRHT	5.732	.019	4.414	93	.000	5.81333	1.31694	3.19816	8.42851
RCRHI	34.080	.000	1.201	93	.233	2.26889	1.88974	-1.48375	6.02153
RCRHM	28.959	.000	2.070	93	.041	2.99333	1.44627	.12133	5.86533
RCRHR	21.068	.000	.411	93	.682	.54222	1.32076	-2.08054	3.16498
RCRHL	9.221	.003	4.921	93	.000	5.60667	1.13934	3.34417	7.86917
TRCLH	23.053	.000	3.224	93	.002	15.13111	4.69295	5.81185	24.45038
TRCLH	17.937	.000	3.326	93	.001	17.22444	5.17903	6.93992	27.50897

As can be seen from the table. 5, the p-Levene level for crest score values of all fingers of the left hand, except the first, and all fingers of the right hand of rapists and CG men is less than 0.05. This means that the variances of this variable in the groups are not equal. Therefore, these signs should not be taken into account when analyzing the data using the Student's t-test.

Thus, differences in the comb count of only the 1st finger of the left hand should be taken into account. For Student's t-test, the p-level for the values of this crest score is 0.001, that is, the mean values of the crest scores on this finger of rapists and CG men differ at a high level of statistical significance.

A comparative analysis of the total ridge counts for the fingers of the left and right hands of rapists and men

of CG showed that the variances of this variable in the groups are not equal, so we do not take this indicator into account.

That is, for the rapist-Control couple, the statistically significant variable (according to the Student's criterion) is the ridge score of the I finger of the left hand.

As it was established above, the distribution of the total delta score of the left and right hands both in the group of rapists and CG men differs from the normal one. Statistical data are presented in the table 6.

Wilcoxon and Mann-Whitney tests were used to compare data not subject to normal distribution (Table 7).

**Table 6**  
**Statistical indicators of the total delta score of the fingers of rapists and men of CG**

Statistics					
		LeftDeltaCount	RightDeltaCount	LeftDeltaCount CG	RightDeltaCount CG
N	Valid	50	50	45	45
	Missing	0	0	7	7
Mean		6.0600	6.3000	6.6667	6.3778
Std. Error of Mean		.17240	.19219	.32255	.30032
Median		6.0000	6.0000	6.0000	6.0000
Mode		5.00	6.00	5.00	6.00
Std. Deviation		1.21907	1.35902	2.16375	2.01459
Range		5.00	5.00	7.00	7.00
Minimum		5.00	5.00	3.00	3.00
Maximum		10.00	10.00	10.00	10.00
Percentiles	25	5.0000	5.0000	5.0000	5.0000
	50	6.0000	6.0000	6.0000	6.0000
	75	7.0000	7.0000	9.0000	8.0000

Table 7

## Results of a comparative analysis for the delta score of the fingers of rapists and CG men

Ranks								
	Narco	N	Mean Rank	Sum of Ranks	CG	N	Mean Rank	Sum of Ranks
DeltaCount	left	50	47.91	2395.50	left	45	46.41	2088.50
	right	50	53.09	2654.50	right	45	44.59	2006.50
	Total	100			Total	90		

Ranks								
	Left	N	Mean Rank	Sum of Ranks	Right	N	Mean Rank	Sum of Ranks
DeltaCount	Raper	50	45.25	2262.50	Raper	50	47.24	2362.00
	CG	45	51.06	2297.50	CG	45	48.84	2198.00
	Total	95			Total	95		

Test Statistics				
	Left-Right DeltaCount <sup>a</sup>	Left-Right DeltaCount <sup>b</sup>	LeftDeltaCount <sup>c</sup>	RightDeltaCount <sup>c</sup>
Mann-Whitney U	1120.500	971.500	987.500	1087.000
Wilcoxon W	2395.500	2006.500	2262.500	2362.000
Z	-.938	-.336	-1.064	-.291
Asymp. Sig. (2-tailed)	.348	.737	.287	.771

Note: a. Grouping Variable: Raper;  
b. Grouping Variable: CG

Grouping Variable: group

As the results of the comparative analysis according to the non-parametric Mann-Whitney test showed, the values of the delta score of the fingers of the left and right hands of rapists, as well as of CG men, do not differ ( $U = 1120 > U_{0.05} = 1098$ ,  $p = 0.348$ ). It should be noted that no statistically significant differences of this indicator were observed on the fingers of both hands of rapists and CG men ( $p = 0.287$  and  $p = 0.771$ , respectively).

**Conclusions.** In the course of the study, the presence of phenotypic (dermatoglyphic) signs characteristic of persons prone to sexual crimes was established:

1. The structure of digital dermatoglyphics is dominated by radial loops, rarely complex patterns and ulnar loops.

2. The peculiarities of homolateral symmetry were revealed:

2.1. mostly there are 2-3 types of patterns in various combinations;

2.2. radial loops prevail on the I fingers of both hands, arcs and complex patterns are rare;

2.3. on II fingers - arcs, radial loops and curls prevail, rarely - ulnar loops and complex patterns;

2.4. complex patterns and radial loops predominate on III-V fingers.

3. Features of bilateral symmetry are not revealed.

4. The values of the comb count I of the fingers of both hands in persons who have committed sexual crimes are statistically significantly ( $p < 0.001$ ) different from the values of this in the control group.

5. The values of the delta score of the fingers of the left and right hands of rapists and men of the control group do not differ.

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### ОСОБЛИВОСТІ ПАЛЬЦЕВОЇ ДЕРМАТОГЛІФІКИ У ЧОЛОВІКІВ, СХИЛЬНИХ ДО СТАТЕВИХ ЗЛОЧИНІВ

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**Резюме.** Встановлено, що частота радіальних петель на лівій руці становила 59,60 % у гвалтівників

проти 22,67 % у КГ, на правій – 56,80 % проти 19,56 %, відповідно; ульнарних петель – 3,20 % проти 37,78 % на правій та 3,60 % проти 40,00 % на лівій, частота дуг – 14,40 % проти 4,44 % на правій та 12,00 % проти 5,33 % на лівій. У гвалтівників на I пальці лівої та правої рук найчастіше зустрічались радіальні петлі – 44,00 % та 42,00 %, відповідно, завитки (26,00 % та 38,00 %) та складні візерунки (22,00 % та 18,00 %), ульнарні петлі – по 2,00 % на обох руках, дуги – у 6,00 % на лівій руці та не зустрічались на правій; на II пальці дуги – 34,00 % на лівій і 32,00 % на правій руках, радіальні петлі (30,00 % та 24,00 %) та завитки (20,00 % та 26,00 %), ульнарні петлі (8,00 % і 10,00 %), складні візерунки (по 8,00 %); на III пальці – радіальні петлі (68,00 % та 70,00 %) та дуги (по 18,00 % на обох руках), завиткові візерунки (10,00 % та 4,00 %), ульнарні петлі та складні візерунки по 2,00 %; на IV пальці обох рук найчастіше зустрічались радіальні петлі (72,00 % та 70,00 %) та завиткові візерунки (16,00 % та 24,00 %), інші візерунки – по 2,00 %; на V пальці радіальні петлі – 84,00 % та 78,00 %, інші візерунки – від 2,00 % до 8,00 %. У КГ на I, III та V пальцях обох рук найчастіше зустрічались ульнарні петлі (35,56 %, 40,00 % та 53,55 %), а на II, IV – завиткові візерунки (33,33 % та 47,78 %) та ульнарні петлі (30,00 % та 35,55 %); на IV та V пальцях не зустрічались дуги. Встановлено статистично достовірно більшу кількість радіальних петель у гвалтівників, ніж у чоловіків КГ, на пальцях обох рук за винятком II, дуг за винятком III пальця, меншу кількість ульнарних петель на всіх пальцях обох рук та завитків на IV і V пальцях ( $p < 0,01$ ).

**Ключові слова:** судова медицина, дерматогліфіка, статеві злочини.

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