DERMATOGLYPHIC CHARACTERIZATION OF SOCCER PLAYERS

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Introduction

Athletes have physical characteristics that differ them from untrained individuals. The evaluation through anthropometric tests, as well as physical capacity and genetic characteristic ones, enables a greater efficiency in the role performed during the game. Dermatoglyphics consists of an analysis method of the fingerprints as genetic and of fetal development marks.[1]

Objective

The objective of this work was to observe a Dermatoglyphic profile in the basic categories high-performance male soccer athletes of Chapecoense Soccer Club, Chapecó, Santa Catarina, Brazil.

Method

Study with n=134 individuals divided into Athletes Group (AG) composed of 67 individuals of the sub 20 category, being 11 defenders, 8 midfielders, 14 attackers, 2 center-forwarders, 7 goalkeepers, 6 right side, 4 left side and 15 midfielder with mean (SD) age 16.12 (1.69), weight in kg 67.67 (7.49) height in cm 175.84 (7.70) and Control Group (CG) composed of 67 men with mean (SD) age 17.63 (2.03), weight in kg 68.17 (11.81) height in cm 171.97 (5.96). The groups were compared by the Dermatoglyphic method proposed by Cummins and Midlo (1961)[2] through Dermatoglyphic Reader ®[3]. For the statistical analysis the level of significance p≤0,05 was established. The Kolmogorov-Smirnov test was used to compare the number of lines between AG and CG, aiming to verify the normality of the distribution. As inference, Mann-Whitney non-parametric test and parametric t Test were applied in order to compare the continuous variables. The Chi-squared test was used to compare the categorical variables: Arch (A), Radial Loop (LR), Ulnar Loop (LU), and Whorl (W).

Results

The results show that the number of lines in the fingerprint patterns was significantly higher in AG than in CG in the total ridge count on the right index finger (p=0.047) and in the right total ridge count on the right hand (p=0.042).

Table 1: Mean ridge count of fingerprints when compared the Athletes group and the Control group

Fingers	Abbreviation	Group A (AG)	Group C (CG)	p
Right index finger	MSQL2	8,96±6,22	6,85±5,32	0,047*
Total ridge count on the right hand	SQTLD	58,33±20,62	51,16±19,81	0,042*

*p≤0.05

The presented data, when observed the total sum of patterns, show that athletes have more frequency of radial loop, ulnar loop and whorl than the control group, which, in turn, has more frequency of arch. On the left index finger (MET2) there is a greater difference between the values of the groups studied, since the arch is the most frequent in the group control, appearing 10 times, while in the athletes group, it appeared twice, and the radial loop was the most frequent one, appearing 16 times, whilst in the control group it appeared 10 times. In the descriptive analysis of the frequency of patterns per finger, the highest values are: arch on the left index finger (MET2 = 14.9%) and whorl on the right thumb (MDT1 = 41.8%), both in the control group; radial loop on right index finger (MDT2 = 25.4%), and ulnar loop on right little finger (MDT5 = 92.5%), both on the athletes group.

Conclusions

The study demonstrated that high-performance soccer athletes, when compared to non-atlhetes, have more quantity of lines on the right index finger (MDT2) and on the total ridge count of the right hand (SQTLD). There was no significant difference in relation to the figures Arch, Radial Loop, Ulnar Loop, and Whorl. Dermathoglyphics is a tool and auxiliary method for the evaluation and guidance process of high-performance athletes, in the search for the best performance. It is sugested that other researches that observe the dermatoglyphic characteristics of patterns related to the athletes' game position are performed with a greater sample.

1. Dantas, Estelio Herirque Matín. **Periodização do treinamento. A prática da preparação física**. 6 ed. Rio de Janeiro: Shape, 2014.

2. Cummins H, Midlo CH. **Finger Prints, Palms and Soles an Introduction to Dermatoglyphics**. New York: Dover Publications, 1961.

3. Nodari Junior RJ, Heberle A, Ferreira-Emygdio R, Knackfuss MI. Dermatoglyphics: correlation between software and traditional method in kineanthropometric application. **Rev Andal Med Deporte**. 2014; 7(2): 60-5