74 - DERMATOGLIPHIC CHARACTERISTICS AMONG THE MATURATION STAGES OF THE FUTSAL BEGGINER ATHLETES FROM THE POTIGUAR SEMIARID REGION.

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INTRODUCTION

Sport Futsal is clearly a phenomenon of great magnitude in the context of contemporary sports culture. Paradoxically, it is possible to verify the existence of significant resistance to the recognition of the potential level of education and training this sport, as a matter of teaching / training, acts on young people (Teixeira, 2006).

Accordingly to Dantas and Fernandes Filho (2002), an ideal application to sport Futsal demands using previous knowledge of the genetic capabilities and trends, coupled with the phenotypic contribution that can contribute to a proper development of the athlete.

And the access to these genetic tendencies will be the through dermatoglyphic which, together with the contribution of environment appropriated for training, can contribute, though not uniquely, to the determination of a talent and its further development (Skinner, 2002).

The dermatoglyphic patterns are established even in the intrauterine life, and remain stable with age, causing the post-natal involvement have no role in dermatoglyphic variability, except in certain pathological conditions, bringing advantages over other physical or physiological measures in humans (Chakraborty, 1991).

According to Fernandes Filho (1997), the dermatoglyphic allows you to choose with higher optimization the specialization in the sport in relation to the individual talent. This assumption is an effective tool that teams can afford to know their performance in advance. Through this procedure could be obtained not only maximizing performance in sports, but also the correct direction of efforts, time and money. Therefore, and in order to glimpse the appropriated abd future performance of athletes, it is clear that in the initial training of athletes is important to use the contributions from the dermatoglyphics.

Therefore, the aim of this study was to determine through the Cummins & Midlo dermatoglyphic method (1942) the characteristics of fingerprints among the maturation stages of the Futsal beginner athletes from the potiguar semi-arid region.

MATERIALS AND METHODS

Research ethics

This research was submitted to the Ethics in Research Involving Human-Euro-American Network of Human Movement, in order to comply with the provisions prescribed in Resolution 196/96 of the National Health Council, which approved the guidelines and regulating norms for research human beings, being the same with the approved protocol number 008/2010

All parents and / or guardians of the school members of the sample in the study signed a consent form (including: objective of the study, evaluation procedures, possible consequences, emergency procedures, voluntary character of the subject's participation and exemption from responsibility by the evaluator and by the institution that will house the experimental treatment).

Sample

The sample comprised 33 males who are aged 12 to 18 years, belonging to the first four finalists Futsal teams who participated in the regional stage of Mossoró School Games in Rio Grande do Norte, 2009, residents in the semiarid region of Natal, a place where the study was conducted as to its implication in the field. The sample was selected intentionally, and made up of volunteers, obeying the inclusion and exclusion criteria.

DATA COLLECTION PROCEDURES

Sexual maturation

To check the level of sexual maturation was used the Self-evaluation protocol to determinate the sexual maturation (MATSUDO & MATSUDO, 1991). Children and adolescents verified through illustrative color photos of the boards of Tanner stages that were in relation to pubic hair and genitals and took notes in a form. The classification of the genitals or pubic hair stage ranged from I to V, considered the stage (I) pre-pubertal, stages (II, III and IV) puberty, and stage (V) post-pubescent.

Dermatoglyphics

The protocol for determining the dermatoglyphic characteristics was the digital dermatoglyphics by Cummins & Midlo (1942) cited by Fernandes Filho (1997) and updated through the use of new materials. For this collection, we used paper machine density and average roughness (preferably A4 size office paper) and a cushion for fingerprinting which brand was Impress, model

3500. After the collection of fingerprints, the protocol advocated: identifying the types of design - Arch (A), Loop (L) or Whorl (W) count the number of lines in each finger (QL), count the lines in all ten fingers (LQTS), determine the number of deltas (D10), determine the types of digital formula.

Statistical Treatment

This study used the descriptive statistics of the sample indicating the measurements of central tendency: mean, standard deviation and maximum and minimum values.

RESULTS

The results are presented in three times, according to Tables 1, 2 and 3 with mean values ($\bar{x}$), standard deviation (s), minimum and maximum. In some variables we noticed a high standard deviation. Despite the distinction of these values, the group performed in the most homogeneous variables.

Table 1 shows the types of dermatoglyphic patterns (A = arch, L = loop, W = whorl) by maturational stage, Table 2 shows the amount Delta (D10) and the sum of total lines (LQTS) in maturational stage of each sample, Table 3 shows the digital formula (AL, ALW, 10L, L = W L> W, W> L) at each stage of maturity in percent.

Table 1 - Mean values and standard deviation of the types of drawings to the maturational stage of beginner Futsal athletes from the semi-arid region of Rio Grande do Norte - 2010.

Stage	Patterns	*n*	Minimum	Maximum	$\bar{x}$	*s*
Prepubertal	Arch	4	0,0	0,0	0,0	0,0
	Loop		5,0	10,0	7,0	2,2
	Whorl		0,0	5,0	3,0	2,2
Pubescent	Arch	25	0,0	6,0	0,8	1,8
	Loop		1,0	10,0	6,8	2,8
	Whorl		0,0	9,0	2,5	2,8
Postpubertal	Arch	4	0,0	5,0	1,3	2,5
	Loop		4,0	10,0	7,8	2,9
	Whorl		0,0	3,0	1,0	1,4

Source: Research data

Table 2 - Mean values and standard deviation of D10 and to the maturational stage of LQTS beginner Futsal semi-arid region of Rio Grande do Norte - 2010.

ESTÁGIO	Category	*N*	Minimum	Maximum	$\bar{x}$	*s*
Prepubertal	D10	4	10,0	15,0	13,3	2,2
	LQTS		135	153	142,8	8,7
Pubescent	D10	25	4,0	19,0	11,6	3,7
	LQTS		33,0	181,0	127,7	35,8
Postpubertal	D10	4	6,0	13,0	9,8	2,9
	LQTS		43,0	148,0	109,0	45,7

Source: Research data

Table 3 - Formulas for digital maturational stage (%) of athletes beginners Futsal semi-arid region of Rio Grande do Norte - 2010.

Formula	Stage	Percentage (%)
AL	Prepubertal	0,0
	Pubescent	100,0
	Postpubertal	0,0
ALW	Prepubertal	0,0
	Pubescent	66,7
	Postpubertal	33,3
10L	Prepubertal	10,0
	Pubescent	70,0
	Postpubertal	20,0
L=W	Prepubertal	100,0
	Pubescent	0,0
	Postpubertal	0,0
L>W	Prepubertal	16,7
	Pubescent	75,0
	Postpubertal	8,3
W>L	Prepubertal	0,0
	Pubescent	100,0
	Postpubertal	0,0

Source: Research data

DISCUSSION

With respect to Table 01, which deals more specifically with the type of design, we noticed a predominance of loops in the three stages (L) on the arc (A) and whorls (W), with average values of 7.0, 6.8 and 7.8 respectively, noting how the design features athletes from anaerobic, speed and explosive power.

In a study with high performance Handball, Junior Cunha (2006) found similar results, with a high presence of loops. Suggesting a tendency to force capacity and the presence of quality physical speed, characteristics that are relevant to handball. On his study of young from Futsal, Alonso detected in prepubertal and postpubertal groups predisposition to resistance rate observed also by high levels of tabs.

Alonso et al (2005) and Silva Dantas (2004) note the correlation of motor memory components to the type of design: visual component - clips; proprioceptive motor - whorl.

Table 02 is observed for the D10 intermediate values that demonstrate dominance in the three stages of cyclical activities and the LQTS observed mean values for pre-pubescent to 142.8 ± 8.7 suggesting a greater endurance and coordination of activities acyclic. The pubescent averaging 127.7 ± 35.8 and post-pubescent with an average of 109.0 ± 45.7

have intermediate levels of coordination of endurance. In his study on Futsal youth, Alonso (2005) found these characteristics in the groups pre-pubescent and post-pubescent, with reasonable levels of coordination and predisposition to intermediate levels of resistance by the D10 and LQTS. In another study of young athletes in Soccer, Campos and Dantas (2009) found for prepubertal characteristics of endurance, coordination and neuromotor activities by means of acyclic LQTS and D10. Although the LQTS and D10 were found for pubertal characteristics for anaerobic and post-pubertal characteristics neuromotor with cyclic activities.

In the study of Futsal athletes of high performance, Silva Dantas (2004) corroborates Abramova (1996), when he mentions that there is high performance in a trend towards the disappearance of the arc, to an increase in W, D10 and SQLT parts, indicative of increased coordination, along with other basic qualities, optimizing their predominance, for example, strength to explosive strength, speed to explosive speed and for a longer time, and associations to agility. Negri (2005) and Silva Dantas (2004) there is a connection of number of lines and VO2max, directly reflecting the correlation of the complexity of designs and resistance, confirming the study where pre-pubescent obtained the highest means of LQTS and VO2max .

Looking at Table 03, there is maturational stages, in terms of formulas digital pre-pubescent achieved 100% of the combination L = W, 16.7% of the combination L> W and 10.0% of the combination 10L, featuring this stage in speed endurance levels of coordination and reasonable confirmed by LQTS and D10 = 13.3 = 142.8. On puberty ones were found 100% of the combinations AL and W>L, 66.7% of the combination ALW, 75.0% of the combination L>W and 70.0% of the combination 10L, with athletes at this stage with a predisposition to the development of strength , speed and power, endurance, speed and good levels of coordination. But the post-pubertal stage was characterized by athletes with a tendency to develop explosive strength and speed endurance, identified by the values of ALW 33.3%, 20.0% 10l and 8.3% L> W, and also predisposition to poor coordination with D10 = 9.8 and LQTS. = 109.0

Junior Cunha (2005), in a study with three levels of female handball athletes found the incidence of these formulas digital results: Beginners: predisposition to develop strength, speed and power (AL = 33.3% - 20.0% = ALW - L> W = 13.3%), low income: a predisposition to prolonged speed (U> W = · 60.0%) High income: predisposition to prolonged speed, strength and power (L> W = 53.3% - AL = 33.3%).

CONCLUSION

This study concludes that among the evaluated athletes, all maturation stages showed the following characteristics in relation to dermatoglyphics: increased presence of (L), followed by (W), lower incidence of (A), and intermediate values of D10 and LQTS. These data reveal a genetic predisposition to high strength, endurance, speed, intermediate levels of coordination and agility, physical qualities considered important for the practice of Futsal.

The study suggests the practical applicability of dermatoglyphics as a genetic marker in the optimization of intervention strategies, coaching and selection in sport. Nevertheless, it is considered that the environment (phenotype) could interfere positively or negatively on the confirmation of the findings.

It is recommended investigations involving the assessment of the state (phenotype) and genetic potential (dermatoglyphics) and studies on the relationship between the state and genetic predisposition are implemented. Also, for future work, the development of longitudinal studies to investigate more precisely the influence of the phenotype in the development of basic physical qualities, as well as comparative studies of young athletes of different sports, including by examining the maturational factor.

Finally it is recommended to area professionals to analyze and to plan, basing their training goals on the results of studies such as these tend to show positive and negative common traits among athletes, which can be correlated with better performance.

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DERMATOGLIPHIC CHARACTERISTICS AMONG THE MATURATION STAGES OF THE FUTSAL BEGGINER ATHLETES FROM THE POTIGUAR SEMIARID REGION.

ABSTRACT:

The dermatoglyphics provides access to genetic tendencies that, combined with the contribution of the training environment, can contribute, though not uniquely, to determine the talent and also for its development. The purpose of this study was to determine the characteristics of fingerprints between maturational stages of futsal beginner athletes from the potiguar semiarid region. The methodology used was the digital dermatoglyphics of Cummins and Midi (1942) and the self-assessment protocol by Tanner boards in determining sexual maturation, and as an analytical reference, we used descriptive statistics. The stages studied were the following characteristics in relation to dermatoglyphics: increased presence of (L), followed by (W), lower incidence of (A), and intermediate values of D10 and LQTS; prevalence of digital formulas (10L) (L > W) and (W> L). These data reveal a genetic predisposition to high strength, speed endurance, intermediate levels of coordination and agility, physical qualities considered important for the practice of Futsal.

KEY-WORDS: Dermatoglyphics, Futsal, Maturation.

CARACTÉRISTIQUES DERMATOGLYPHIQUES ENTRE LES STAGES DE MATURATION DE SPORTIFS DÉBUTANTS DE FUTSAL DE LA RÉGION SEMIARIDE DE RIO GRANDE DO NORTE.

RÉSUMÉ:

La dermatoglyphie permet l'accès à des tendances génétiques qui, sommée à la contribution du milieu propice à l'entraînement, peuvent contribuer, bien que non pas de manière unique, à la détermination du talent et à son développement aussi. L'objectif de cette étude a été déterminer les caractéristiques des empreintes digitales entre les stages de maturation de sportifs débutants de Futsal de la région semiaride de Rio Grande do Norte. La méthodologie utilisée a été celle de la dermatoglyphie digitale de Cummins et Midio (1942) et le protocole d'autoévaluation par les planches de Tanner dans la détermination de la maturation sexuelle et, comme référence analytique, on a utilisé la statistique descriptive. Les stages évalués ont présenté les caractéristiques suivantes par rapport à la dermatoglyphie: majeure présence de (L), suivi de (W), mineure fréquence de (A), et valeurs intermédiaires du D10 et SQTL ; prédominance des formules digitales (10L), (L>W) e (W>L). Ces donnés-ci révèlent une élévée prédisposition génétique à la force, résistance de vitesse, niveaux intermédiaires de coordination et agilité, considérées des qualités physiques importantes pour la pratique du Futsal.

MOTS-CLÉS : Dermatoglyphie, Futsal, Maturation

CARACTERÍSTICAS DERMATOGLÍFICAS ENTRE LAS ETAPAS DE MADURACIÓN DE ATLETAS PRINCIPIANTES DE FÚTBOL SALA DE LA REGIÓN SEMIÁRIDA POTIGUAR

RESUMEN:

La dermatoglifia proporciona acceso a las tendencias genéticas que, combinado con la contribución del ambiente propicio a la formación, pueden contribuir, aunque no únicamente, para determinar el talento y también para su desarrollo.El propósito de este estudio fue determinar las características de las huellas dactilares entre las etapas de maduración de los atletas principiantes de Fútbol Sala de la región semiárida potiguar. La metodología utilizada fue la dermatoglifia digital de Cummins y Midio (1942) y el protocolo de auto-evaluación por los estadios de Tanner para la determinación de la maduración sexual, y como referencia para el análisis, se utilizó la estadística descriptiva. Las etapas estudiadas presentaron las siguientes características en relación con dermatoglifos mayor presencia de (L), seguida por (W), menor incidencia de (A), y valores intermedios del D10 y SQTL; predominio de fórmulas digitales (10L), (L> W) y (W> L). Estos datos revelan una alta predisposición genética a la fuerza, resistencia de velocidad, niveles intermedios de coordinación y agilidad, cualidades físicas consideradas importantes para la práctica del Fútbol Sala.

PALABRAS CLAVE: Dermatoglifos, Maduración, Fútbol Sala

CARACTERÍSTICAS DERMATOGLÍFICAS ENTRE OS ESTÁGIOS MATURACIONAIS DE ATLETAS INICIANTES DE FUTSAL DA REGIÃO DO SEMIÁRIDO POTIGUAR

RESUMO:

A dermatoglifia possibilita o acesso a tendências genéticas que, somada à contribuição de ambiente propício ao treinamento, podem contribuir, embora não de maneira única, para a determinação do talento e também para o seu desenvolvimento. O objetivo do presente estudo foi determinar as características das impressões digitais entre os estágios maturacionais de atletas iniciantes de Futsal da região do semiárido potiguar. A metodologia utilizada foi a da dermatoglifia digital de Cummins e Midio (1942) e o protocolo de autoavaliação pelas pranchas de Tanner na determinação da maturação sexual e, como referência analítica, foi utilizada a estatística descritiva. Os estágios avaliados apresentaram as seguintes características em relação à dermatoglifia: maior presença de (L), seguido de (W), menor ocorrência de (A), e valores intermediários do D10 e SQTL; predominância das fórmulas digitais (10L), (L>W) e (W>L). Estes dados revelam uma elevada predisposição genética para força, resistência de velocidade, níveis intermediários de coordenação e agilidade, consideradas qualidades físicas importantes para a prática do Futsal.

PALAVRAS-CHAVES: Dermatoglifia, Futsal, Maturação