DERMATOGLYPHIC CHARACTERISTICS IN CEDAR CAMPECHE INTERNAL ATHLETES IN THE ACADEMIC YEAR 2021-2022

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Abstract. Introduction: In sports, dermatoglyphics are being used as a marker of biological individuality to select athletes with outstanding performances. Objective: Determine dermatoglyphic characteristics as an indicator in the selection of CEDAR Campeche athletes, taking into account their sporting genetic potential and general genetic predisposition required for the sport they practice. Methods: it is a basic type of research, with a descriptive, field and bibliographic scope, with a non-experimental cross-sectional design and a quantitative approach. As a method for the inclusion and exclusion of the sample, a survey will be used to separate them and take an intentional sample within the population to perform the dermatoglyphic analysis and determine the potential and sporting genetic predisposition. Results: the population analyzed has a high level of sporting genetic potential in the physical characteristics of coordination and resistance, both in men and women of the 3 sports, while the physical characteristics to be enhanced include strength, speed and agility, on the other hand, the general genetic predisposition in CEDAR Campeche athletes in the 2021-2022 academic year, remains with a general genetic predisposition at a high level with 64%, medium with 28% and only 8% of the athletes analyzed, they do not have a general genetic predisposition to be in high performance. Conclusions: With these data we deduce that the CEDAR Campeche talent recruitment programs have good effectiveness and complementing it with dermatoglyphic analysis, the percentage of general genetic predisposition would increase.

Keywords: Athletes, sports talent, dermatoglyphics.

CARACTERÍSTICAS DERMATOGLÍFICAS EN ATLETAS INTERNOS DEL CEDAR CAMPECHE EN EL CURSO 2021-2022

Resumen. Introducción: En el deporte se está utilizando la dermatoglífia como marcador de individualidad biológica para seleccionar deportistas con rendimientos sobresalientes. Objetivo: Determinar las características dermatoglíficas como indicador en la selección de atletas del CEDAR Campeche, teniendo en cuenta su potencial genético deportivo y predisposición genética general requeridas para el deporte que practica. Métodos: es una investigación de tipo básico, con alcance descriptivo, de campo y bibliográfica, con diseño no experimental transversal y enfoque cuantitativo. Como método en la inclusión y exclusión de la muestra se utilizará una encuesta, para separarlos y tomar una muestra intencionada dentro de la población para realizar el análisis dermatoglífico y determinar las potencialidades y predisposición genética deportiva. Resultados: la población analizada, cuenta con un potencial genético deportivo en nivel alto en las características físicas de coordinación y resistencia, tanto en hombres como en mujeres de los 3 deportes, mientras que en las características físicas a potenciar se encuentran la fuerza, velocidad y agilidad, por otra parte, la predisposición genética general en atletas del CEDAR Campeche en el curso 2021-2022, se mantiene con una predisposición genética general en un nivel

alto con 64%, medio con un 28% y solo un 8% de los deportistas analizados, no cuentan con una predisposición genética general para estar en el alto rendimiento. Conclusiones: Con estos datos deducimos que los programas de captación de talentos del CEDAR Campeche tienen una buena efectividad y complementándola con el análisis dermatoglifico, aumentaría el porcentaje de predisposición genética general.

Keywords: Athletes, sports talent, dermatoglyphics.

Introduction

Fingerprint dermatoglyphics is recognized as an effective scientific tool for the diagnosis of physical potentialities related to physical performance. It can be very useful in sports detection, selection and orientation, as well as a starting point for health-related physical training. Likewise, its capacity as a predictor of prevention of some diseases is valued, but its use in the health sciences to date is very limited; therefore, it is thought that its potential as a diagnostic and prognostic tool in this field is wasted. Its potential is appreciated in the field of sports science, where its use is more widespread, especially in other parts of the world. Therefore, in Mexico there is virgin ground, both for research and for its practical application, as a consulting service to public and private sports institutions, which can be of help for decision making when selecting sports talent.

From studies conducted, it was determined that dermatoglyphic and somatotypic profiling establishes a quantitative and qualitative analysis of the fingerprints (third phalanx) and is understood as a genetic marker, which yields a series of variables associated with the physical abilities of a subject (Fernández y Ferreira, 2011). In Brazil, this tool has been widely developed in sports such as volleyball, basketball, karate, boxing, gymnastics, handball, triathlon, field soccer, fencing and swimming (Colmenares et al., 2016). However, from the review found, it was identified that in Colombia, authors such as (Avella y Medellin , 2013); (Colmenares et al., 2016) have implemented this tool in sports such as swimming, athletics, gymnastics, basketball and cycling, which leads to evidence that there has been very limited research in this regard, in contrast to the wide range of sports practiced in the country.

In this way, it is clearly evident the need to deepen in other sports disciplines that have a great relevance at national level, such as wrestling, judo and athletics, since they are considered as sports that have given more recognition to the Campeche delegation in regional, national and international events (CONADE, 2018). For this reason, dermatoglyphics is an opportunity to obtain genetic data at low cost and easy accessibility to strengthen the sports processes in the state of Campeche.

In the call issued by INDECAM on the state program "Sports Talent Recruitment" convenes for the 2021-2022 cycle within the sports processes in their sports talent and national reserve programs", are given under the categories of initiation (7-10 years), base (11-13 years) and development towards high performance (14 years and older).

Cancio and Calderin (2010)agree that specific motor skills can begin to be developed at transition ages, stimulating flexibility, strength and endurance. In addition, work is done so that the child can develop body control and analytical movements, as well as the incorporation of techniques and gestures specific to each sport.

In these ages of sports transition, the identification of the capacities and potentialities is sought by means of physical condition tests, which can be complemented from the wide orientative benefits that dermatoglyphics has, since as it adds (Colmenares et al., 2016) dermatoglyphics is considered as an alternative tool to make the most of the genetic predisposition of the individual, and thus, develop an athlete in a more complete way in terms of the requirements of their sports practice.

Therefore, it was identified that dermatoglyphics can be a complementary method for the orientation processes in the sports offered by CEDAR Campeche, therefore, it is intended to determine whether dermatoglyphics is a valid tool to guide athletes to the sports offered at CEDAR Campeche.

Dermatoglyphics is a science that has been studied for many years worldwide, however, in our country its knowledge is practically null, unlike other Latin American countries such as Brazil and Argentina that already work with this technique as a support in the search for sports talent.

According to Cordeiro et al. (2014), in these two countries "from 2003 to 2012, 26 studies on dermatoglyphia were found registered as an aid to talent selection, this compendium was made from four scientific databases (Scielo, Dialnet, Latindex and LILAC)" (p. 31-43).

Method

This research was defined as basic with an openness to an applied proposal as long as the conditions for it exist.

For this study, a descriptive scope was used, making known the objective of this research based on the collection of information on the variables independently. By means of dermatoglyphic analysis through the protocol (Cummins y Midlo, 1942).

The modality used in this research work was a field and bibliographic research. We worked as an on-site investigation, taking fingerprints at the scene of the crime, in this case CEDAR Campeche. The inquiry facilitates and empowers this type of investigation.

It is considered bibliographic because it is an absolutely new research in the state and the country, which will allow physical education and sports scholars to have accurate data to apply this science already established in other countries as essential to evaluate conditional and coordinative capacities.

The knowledge provided by this study was decisive for those who are interested in dealing with relatively new information and those who also wish to update their knowledge and broaden their scope of action in the workplace.

According to the guidelines commented by (Hernandez, 2011) this research will be guided by the application of a non-experimental-transversal design, since it seeks to examine, describe and differentiate aspects related to dermatoglyphia and sports genetic potential and general genetic predisposition, and where data will be taken at a single moment from the entire sample and there will be no intervention to modify or alter in any way the development of the athlete, which could affect their performance. Finally, the impact of the measurements obtained will be analyzed and the results will be reported.

For this research, a quantitative approach will be used for the results obtained in a broad way, measuring the variables obtained in a given context and analyzing them by means of a statistical method to obtain a specific point of view (Hernandez, 2011).

Procedure

According to Supo (2014) "there are 5 data collection techniques and you can use one or more of them in your research work." (p.1) In this work a survey will be used to determine if the young people are athletes between 11 and 19 years old belonging to CEDAR Campeche within the internal modality and also to determine the sport specialty to which they belong, to separate them and take only a purposive sample in the population. In addition to determine the sports genetic characteristics, a dermatoglyphic test was performed in search of the sports

genetic potential to associate with the enhanced physical abilities and the general genetic predisposition to determine the level of predisposition towards high performance, and to be able to deduce if it is a possible sports talent.

The data obtained will go through the following steps for the purpose of tabulation and data processing.

Collection of information

Data will be collected at CEDAR Campeche from inmate athletes between the ages of 11 and 19 years old.

The Cummins and Middlo method was used to collect data for the aforementioned test (Fernandes, 2010, pág. 23).

In the verification of dermatoglyphic fingerprint characteristics in internal athletes of CEDAR Campeche in the course 2021-2022 (ages between 11 and 19 years) was used the method of fingerprinting (Cummins y Midlo, 1963) the collection of fingerprints of the 10 fingers was done through a biometric fingerprint scanner brand Dermalog model ZF2, making the capture of a single uniform rolled fingerprint with Certificates: CE, FBI-PIV, FBI-EBTS/F, FCC Part 15 Subpart B Class B, through the Dermalog VC3Version:4.9.0.1821 software, to transfer it to the Excel spreadsheet designed for this process.

After the collection of fingerprints, the following procedure was carried out for their formulation:

A registration table was structured with the different nomenclatures of morphology, ¨A¨; arches, ¨L¨; loops; ¨W¨, whorls.

The number of designs on the fingers of the hands, right and left. Complexity in the designs of the ten fingers of the hands (D10), calculated by the equation:

$$D10= \sum L + 2\sum W$$

Where:
Arcs (A)   0 points, therefore, they do not appear in the equation.
Loops (L)   1 point.
Whorls (W)   2 points.

Number of lines

Each ridge that crosses or touches the imaginary line drawn from the delta to the core is counted, not including the delta or core count. Based on the number of lines of all the fingers of the hands, SQTL is calculated, which is the sum of the number of lines of the fingers of the two hands.

Percentage of the types of digital formulas:
AL   Presence of arches and loops in any combination.
ALW   Presence of arches, loops and whorls in any combination.
10L   Presence of loops.
LW   Presence of loops and whorls with the condition that the number of loops is greater than or equal to five.
WL   Presence of whorls and loops provided that the number of whorls is greater than five.

"The shape of the designs constitutes a qualitative characteristic, while the number of lines (QL), the sum total of the number of lines (SQTL) and the number of skin ridges within the design represent the quantitative characteristics." It is found that each design marks a tendency in certain physical quality, this is established as a guideline to obtain a source of

information of the genetic potential of the athletes, and it is explained which is the condition that demonstrates each design:

Table 1

Types of designs and physical conditions (Morales, 2014)

Class	Digital prints		Somatic-Functional	
	D10	**SQTL**	**Minimum**	**Maximum**
I	5,5	26,5	Height	Relative strength
			Absolute strength	
			Resistance	
			Coordination	
II	9,0	47,7	Coordination	Overall strength
III	11,6	126,4	Relative strength	Height
				Absolute strength
IV	13,1	134,2	Height	Resistance
			Absolute strength	Coordination
V	17,5	162.8	Relative strength	Coordination

Note. Classification of the set of dermatoglyphic indices and somatic-functional index among highly qualified athletes. Taken from (Abramova, 1995) Modified. By (Morales, 2014).

For data tabulation, having already clarified that this is a quantitative study, a statistical process will be carried out with the support of experts and statistical programs that facilitate the work.

All the data will be tabulated initially by joining all the data, and then disaggregating each one into the different sports and genders.

Processing of the information obtained from the application of the tests.
To process the information, the Microsoft Excel program will be used to calculate percentages.

Processing of information using statistical graphs.
Selection of the statistical program.
The program will be used: Microsoft Office Excel.
The aforementioned program will be used because of its ease of use and accessibility to make statistical calculations and graphs to show the diagnosis in both variables.

Data processing.
The statistical method used was descriptive statistics, since it was necessary to use values of mode, mean, median and range.
Validity of the instrument.

Validity says, "Whether an instrument, a procedure, a sampling, a design, are appropriate to help us obtain valid conclusions" (Martínez, 2013, pág. 5).

In dermatoglyphics, the method used is the only recommended method when the aim is to understand the genetically determinant physical capabilities of a person.
Therefore, the instruments are of very high reliability, measuring exactly the capacity to be measured.

Reliability "is a measure to determine the stability of the instrument", stability is understood as the fact that when a test is repeated it yields similar results. (Martínez, 2013, pág. 28).

Results

From the findings, when establishing the predominance of the dermatoglyphic profile in each of the disciplines to which the athletes of CEDAR Campeche belong in the 2021-2022 course, it is characterized by presenting a predominance of the figures loops and whorls in the three sports analyzed, there is a high number of crests in both hands and in general, with a level of potentialities for physical condition of IV, V level and a general genetic predisposition for high performance sports results, the digital formula that is most presented is W>L.

From the evidence collected, it can be deduced that the population analyzed, has a sports genetic potential enhanced in the physical characteristics of coordination and endurance, both in men and women in the 3 sports, while in the physical characteristics to be enhanced are strength, speed and agility, on the other hand, the general genetic predisposition in athletes of CEDAR Campeche in the course 2021-2022, the general genetic predisposition is maintained at a high level with 64%, medium with 28% and only 8% of the analyzed athletes do not have a general genetic predisposition to be in high performance, with these data it can be deduced that the talent recruitment programs of CEDAR Campeche, have a good effectiveness and complementing it with the dermatoglyphic analysis, would increase the percentage of general genetic predisposition.

The following are the relevant results represented in tables and graphs.

Table 2
CEDAR Campeche population classified by sport and gender.

Population of CEDAR Campeche			
Sports	**Quantity**	**Sex**	
		M	F
Judo	8	2	6
Fight	11	11	0
Athletics	6	5	1
Total	25	18	7
Media	8.3	6.0	2.3
Desv. Est.	2.5	4.6	3.2
%	100%	72%	28%

CEDAR Campeche population by sport and sex
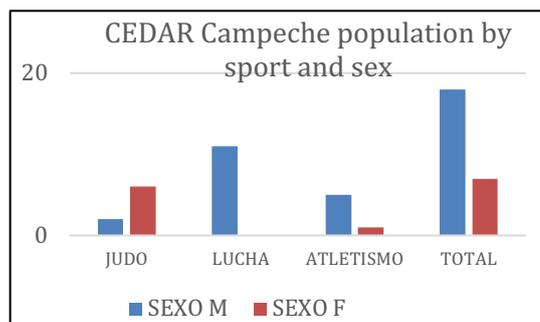
Table 3
Dermatoglyphic profile in CEDAR Campeche athletes in the 2021-2022 school year

Sports	Sex	% W	% L	% A
Fight	Male	54.5%	42.7%	2.7%
	Female	0.0%	0.0%	0.0%
	General	54.5%	42.7%	2.7%
Judo	Male	28.3%	63.3%	8.3%
	Female	33.3%	60.0%	6.7%
	General	28.3%	63.3%	8.3%
Athletics	Male	66.0%	34.0%	0.0%
	Female	20.0%	80.0%	0.0%
	General	58.3%	41.7%	0.0%
General	Male	57.2%	40.6%	2.2%
	Female	31.4%	62.9%	5.7%
	General	50.0%	46.8%	3.2%

Note. %W=percentage of Verticilio, %L=percentage of loops, %a Percentage of arches.
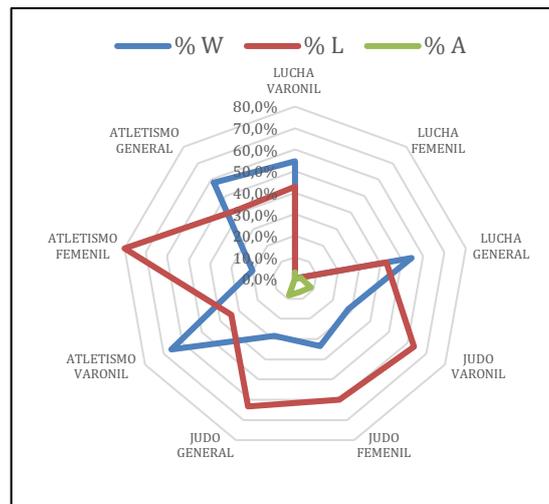
Table 4

Digital formulas in CEDAR Campeche athletes in the 2021-2022 academic year, by sport and gender

Sports	Male			Female			General		
	Form.	**Qty.**	**%**	**Form.**	**Qty.**	**%**	**Form.**	**Qty.**	**%**
Fight	W>L	7	64%	W>L	0	0%	W>L	7	64%
	LWA	1	9%	LWA	0	0%	LWA	1	9%
	L>A	1	9%	L>A	0	0%	L>A	1	9%
	L>W	2	18%	L>W	0	0%	L>W	2	18%
	Totals	11	100%	Totals	0	0%	Totals	11	100
Athletics	10W	2	40%	10W	0	0%	10W	2	33%
	L>W	1	20%	L>W	1	100%	L>W	2	33%
	W>L	1	20%	W>L	0	0%	W>L	1	17%
	L=W	1	20%	L=W	0	0%	L=W	1	17%
	Totals	5	100%	Totals	1	100%	Totals	6	100
Judo	W>L	2	33%	W>L	1	50%	W>L	3	38%
	L>W	1	17%	L>W	0	0%	L>W	1	13%
	10L	1	17%	10L	0	0%	10L	1	13%
	LAW	1	17%	LAW	1	50%	LAW	2	25%
	L>A	1	17%	L>A	0	0%	L>A	1	13%
	Totals	6	100%	Totals	2	100%	Totals	8	100

Note. W=Wing, L=Pins, A=Arches, Form. = formula, Qty. =Quantity.
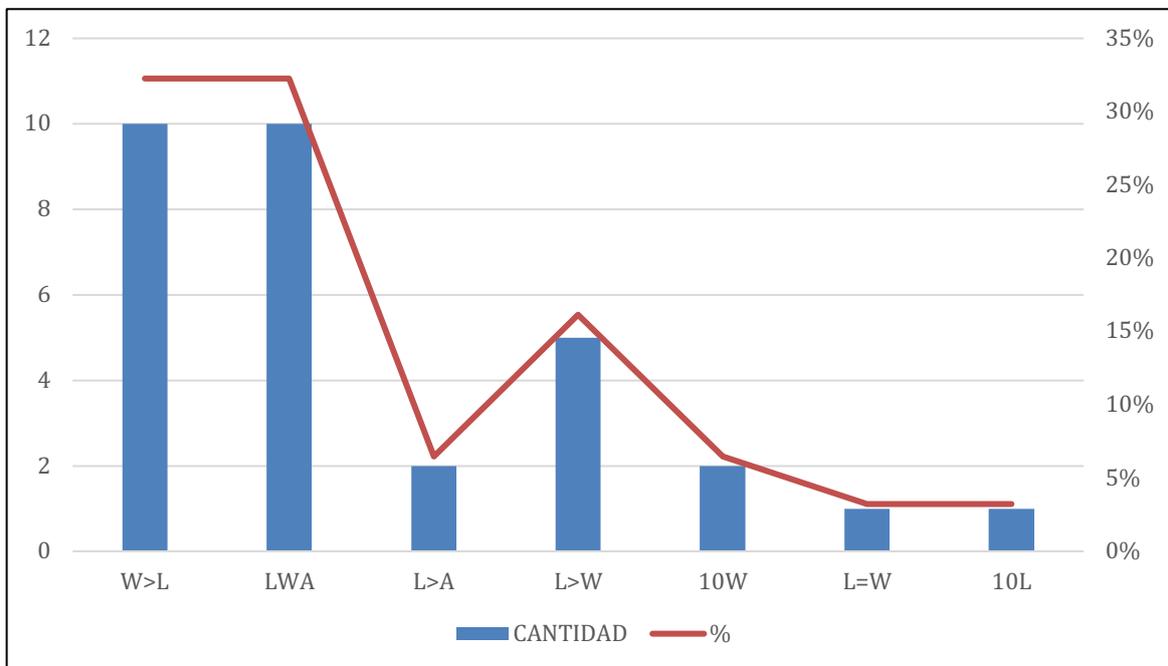
Table 5
Mean values and their derivatives for D10 values by sport and gender

Sports	D10		Total
	Sex		
	V	F	
Judo	14.5 ± 3.5	12.7 ± 3.2	13.1 ± 3.1
Fight	15.2 ± 3.19	0 ± 0	15.2 ± 3.19
Athletics	16.6 ± 3.78	12.0 ± 0	15.8 ± 3.9
General	15.5 ± 3.4	12.6 ± 4	14.6 ± 3.7

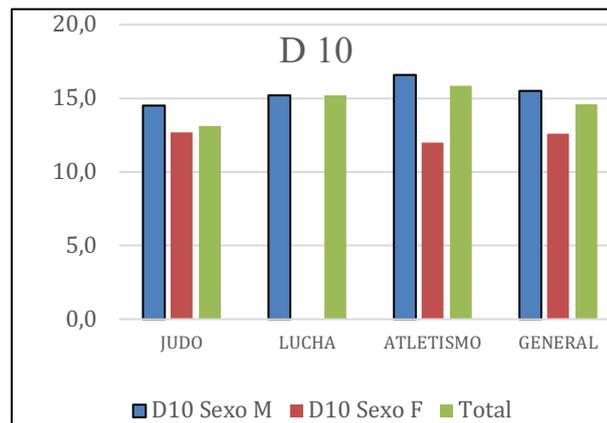*Note.* Male Sex=M, Female Sex=F, D10=Delta Index.

Table 6
lQTS values by sport and gender

Sports	SQTL		Total
	Sex		
	V	M	
Judo	130.00 ±82.02	137.83±39.32	135.88±45.59
Fight	134.77±30.29	00.00±0.00	134.77±30.29
Athletics	165.20±41.33	144.00±0.00	161.67±37.97
General	138.71±35.97	142.69±39.32	141.58±37.71

Note. Male Sex=M, Female Sex=F, SQTL= Total lines on both hands.
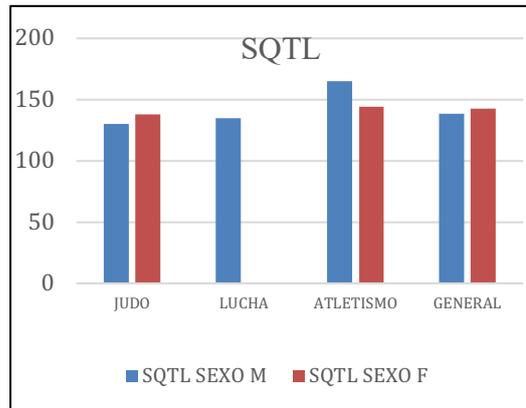
Table 7
Sports Genetic Potential

| Sports Genetic Potential		Judo Total		Fight Total		Athletics Total		General Female		Male		Total	
Powered	**Potential**	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Coordination, Endurance and Agility	Speed and Strength	1	13%	1	9%	2	33%	2	29%	2	11%	4	16%
Coordination and Endurance	Strength, Speed and Agility	4	50%	5	45%	3	50%	3	43%	9	50%	12	48%
Speed, Strength and Explosive Force	Coordination, Agility and Endurance	2	25%	0	0%	0	0%	1	14%	1	6%	2	8%
Speed and Explosive Force	Coordination, Endurance, Agility	1	13%	5	45%	1	17%	1	14%	6	33%	7	28%
Totals		8	100%	11	100%	6	100%	7	100%	18	100%	25	100%
Media		2.00		2.75		1.50		1.75		4.50		6.25	
Standard Deviation		1.41		2.63		1.29		0.96		3.70		4.35	
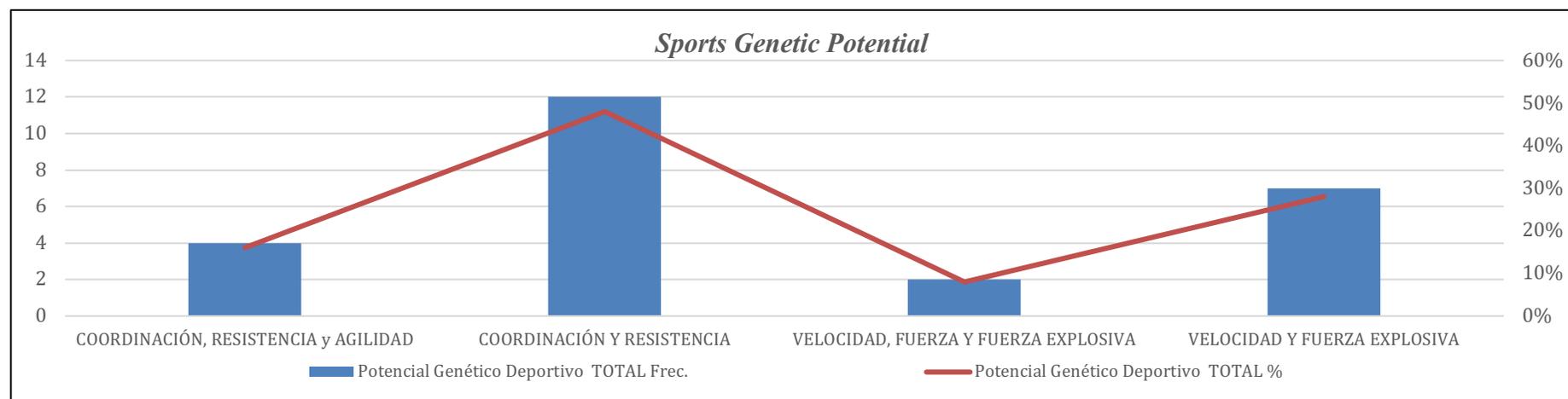
Table 8

General Genetic Predisposition in CEDAR Campeche athletes in the 2021-2022 academic year.

General Genetic Predisposition	Female						Male						General					
	Judo		Fight		Athletics		Judo		Fight		Athletics		Female		Maculino		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
High	4	67%	0	0	1	100%	1	50%	6	55%	4	80%	5	71%	11	61%	16	64%
Media	1	17%	0	0	0	0%	0	0%	5	45%	1	20%	1	14%	6	33%	7	28%
Download	1	17%	0	0	0	0%	1	50%	0	0%	0	0%	1	14%	1	6%	2	8%
Totals	6	100%	0	0	1	100%	2	100%	11	100%	5	100%	7	100%	18	100%	25	100%

General Genetic Predisposition
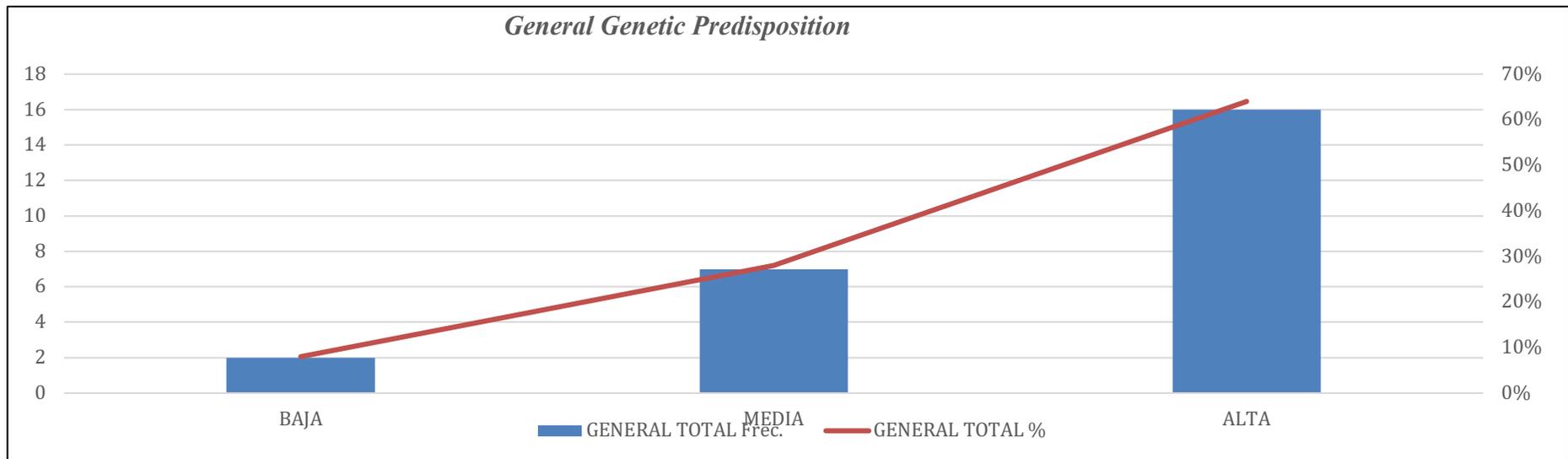
Conclusions and recommendations

From this research it is concluded that CEDAR Campeche should begin to adopt processes and methods of search and selection of sports talent, to guide athletes in their physical abilities and achieve better performance in the training processes, seeking high sports performance, although the results show a general genetic predisposition in a high level with 64%, medium with 28% and only 8% of the analyzed athletes do not have a general genetic predisposition to be in high performance, the ideal would be to reduce the medium levels and reduce the low levels to 0% to increase to 80% the high level of predisposition to high performance. After this analysis it can be deduced that the talent recruitment programs of CEDAR Campeche, have a good effectiveness applying their established protocols, but clearly it can be seen that there is an error bias, that complementing this talent recruitment protocol with dermatoglyphic analysis would eliminate and increase the percentage of high level of general genetic predisposition and with them there would be a greater probability of having consolidated athletes in high performance in competitions at national and international level.

With the results obtained from taking the fingerprints and the whole process carried out, each of the athletes should be guided in their genetic potential evidenced through the dermatoglyphia, for this, specific instructions should be given to coaches and promoters of the proper use and interpretation of this tool to make a more individualized planning and thus comply with one of the principles of sports training.

This information, obtained through Dermatoglyphics, are invaluable and offer a tool for training planning and application in the development of basic physical qualities proposed for the sport in the training process in students with the genetic potential found.

Dermatoglyphics can be a useful tool for the identification and selection of sporting talent and for the evaluation of the sporting potential of athletes. However, more research is needed to confirm the efficacy of this technique and its applicability in different sports disciplines.

A possible area for improvement in this topic would be to conduct further research to evaluate the effectiveness of dermatoglyphic analysis in the selection of sports talent in different contexts and populations. In addition, the incorporation of other biological and psychological markers could be considered to improve the accuracy of sports talent selection.

Another possible area for improvement would be the implementation of more individualized training programs adapted to the biological and psychological characteristics of each athlete, using the information obtained through dermatoglyphic analysis and other markers. This could help maximize each athlete's potential and improve their athletic performance.

References

Avella, R. E. & Medellin , J. P. (2013). Perfil dermatoglífico y somatotípico de atletas de la selección Colombia de atletismo (velocidad) participante en los juegos panamericanos de Guadalajara, 2011. *Revista U.D.C.A Actualidad & Divulgación Científica, 16*(1), 17-25.

Cancio S., R. E. & Calderin A., O. (2010). Consideraciones para la iniciación deportiva. *Efdeportes - Revista Digital, 141*. http://www.efdeportes.com/efd141/consideraciones-para-la-iniciacion-deportiva.htm.

Colmenares, G. A., Montoya, P. Á., & Villalba, A. E. (2016). Técnica de dermatoglifos, una herramienta del entrenador, educador físico y profesional de la actividad física, para detectar talentos. *Ímpetus, 11*(1), 81-92 http://revistaimpetus.unillanos.edu.co/impetus/index.php/lmp1/article/view/191

CONADE. (Julio de 2018). *olimpiadanacional2018*. olimpiadanacional2018: https://olimpiadanacional2018.conade.gob.mx/Medallero_PN.aspx

Cordeiro, W., Gomes, L., Tadeo, M., Bruno, W., & Carvalheiro, F. (2014). A importância da dermatoglifia na detecção de talentos no esporte. *Revista Interdisciplinar, 3*(1), 31-43. http://dx.doi.org/10.24302/sma.v3i1.532.

Cummins, H., & Midlo, C. (1963). Finger prints, palms and soles. An introduction to dermatoglyphics. *Dover Publications, 319.*

Cummins, H., & Midlo, C. H. (1942). *Palmar and plantar dermatoglyphics in primates.* Winstar Institute of Anatomy and Biology.

Fernandes, J. (2010). *La impresión digital (dermatoglifos) y la detección de talentos deportivos.* Center of excellence in physical evaluation.

Fernández, F. J., & Ferreira, P. B. (2011). *Atletas talentosos: um processo de seleção e desenvolvimento.* https://docplayer.com.br/41540938-Atletas-talentosos-um-processo-de-selecao-e-desenvolvimento-resumo.html

Hernandez, S. R. (2011). *Metodologia de la Investigación.* Mc Graw Hill Education.

Martínez, A. (2013). *Validación.* de:http://www.arnaldomartinez.net/enfermeria/validez_y_confiabilidad.pdf. http://www.arnaldomartinez.net/enfermeria/validez_y_confiabilidad.pdf

Morales, S. (29 de ENERO de 2014). Genética deportiva. Atlantic International University. http://www.aiu.edu/applications/DocumentLibraryManager/upload/1-1282014-182728-10487564.pdf

Supo, J. (2014). *La recolección de datos.* https://seminariosdeinvestigacion.com/la-recoleccion-de-datos/

ANNEXES

Annex 1
Survey

INITIAL SURVEY
Dermatoglyphic Characteristics
in Continuing and New Athletes
of CEDAR Campeche in the 2021-2020 academic year

Survey conducted for athletes of CEDAR Campeche

Athlete's Name: _____

The purpose of this survey is to separate the students considered by the researcher as internal athletes of CEDAR Campeche from those who are not, to determine the athletes who are between the ages of 11 to 19 years old. To determine the sport discipline to which he belongs and to know the status in which he is within the sports school, the results were not tabulated.

Question 1. In what modality are you enrolled in CEDAR Campeche?
1. Internal
2. semi-internal
3. External

Question 2. What is your chronological age range?
1. Under 11 years old
2. From 11-13 years old
3. From 14-16 years old
4. From 17- 19 years old
5. More than 19 years old

Question 3. What is your sport specialty within CEDAR Campeche?
1. Fight
2. Judo
3. Weightlifting
4. Athletics
5. Archery

Question 4. What is your status within CEDAR Campeche?
1. New Entry
2. Continue   to

Source: Own elaboration

Annex 2
Template for fingerprint collection and dermatoglyphic analysis