

FINGERPRINT FEATURE AND OUT-STANDING ABILITIES OF HO CHI MINH CITY'S AEROBIC GYMNASTIC ATHLETES

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Abstract:

Based on scientific basis of dermatoglyphics, physiology, Aerobic Gymnastic characteristics and practical applications of dermatoglyphics to the athlete selection all over the world, we have studied and applied 07 criteria and conducted dermatoglyphic analysis for Ho Chi Minh City (HCMC) Aerobic Gymnastic athletes to find the specific fingerprint characteristics of Aerobic Gymnastic athletes. This is a scientific basis for the selection of Aerobic Gymnastic athletes in Ho Chi Minh City in particular and Aerobic Gymnastic athletes in Vietnam in general.

Key words: Dermatoglyphics, fingerprints, athlete selection, Aerobic Gymnastic athletes

INTRODUCTION

So far, we have used dermatoglyphics as a new criterion for reference in the selection field, which is the basis for determining athlete's physical strength and sensitivity level. In addition, dermatoglyphics can also diagnose human innate disease. Therefore, dermatoglyphics is very significant for medicine, sports, especially in athlete selection. In Vietnam, the use of dermatoglyphics in athlete selection has not been popular. Therefore, the research has applied some criteria and conducted dermatoglyphic analysis for HCMC's Aerobic Gymnastic athletes to find the typical fingerprint characteristics of Aerobic Gymnastic athletes, as a scientific basis for Aerobic Gymnastic athlete selection in Vietnam.

RESEARCH METHODS

In the research, we have used methods of synthesis and analysis of related documents, dermatoglyphic observation, dermatoglyphics, read of dermatoglyphic analysis results, and mathematical statistics.

Above all, dermatoglyphic observation, dermatoglyphics, read of dermatoglyphic analysis results are especially important to the research's results.

The following are types of dermatoglyphics and assessment method.

Loop pattern

- **Method of identification:** Is the line of dermatoglyphics on the tip of the finger that

originates from one side of the finger, runs bent to form a half circle, and returns to the origin of the point (Figure 2).

- **Assessment method:** The more loop pattern appears the higher score is.

Arch patterns

- **Method of identification:** Is a dermatoglyphics on the finger that runs from side to side on the tip of the finger. The arch patterns are multi-tiered. It is classified into two types:

- The plain Arch (medium curve)
- The tended Arch (curved shape of arch)

- **Assessment method:** The more arch patterns appear the lower score is.

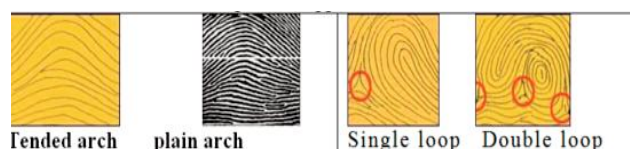


Figure 1. Arch pattern

Figure 2. Loop pattern

Whorl patterns

Whorl patterns are dermatoglyphic that form concentric circles or rounded circles. There are some typical whorl pattern forms:

- **The circular whorl:** The center of the patterns is coincident with the center of the circle.
- **The composite whorl:** The center of the pattern is the leaf shape.
- **The spiral whorl:** The center of the pattern has the shape of a spiral

Research subjects:

We conduct the survey on 23 male and female athletes of HCMC Aerobic Gymnastic team.

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Figure 3. Whorl pattern

RESULTS AND DISCUSSION

1. Results of dermatoglyphic analysis of athletes in HCM's Aerobic Gymnastic team

We used the evaluation score based on athletes' dermatoglyphic criteria written by Thieu Tu Uyen- 1988, Tuoi Tre, (Table 1).

Based on the scores and results of statistical fingerprints of Aerobic Gymnastic athletes in Ho

Table 1. Evaluation score of athlete's fingerprint

(Extracted from the synthetic fingerprint assessment of Thieu Tu Uyen 1988 translation Nguyen Thi Gam)

TT	Patterns	Total score	score			
1	Double loop	20	20	15	10	0
			More than 3 patterns	2 patterns	1 patterns	0
2	Arch	10	10	6	3	0
			0	1~2	3~4	More than 5

Table 2. Summary of fingerprint biopsy results of Aerobic Gymnastic athletes in HCMC team

Order	First name	Name	Single loop	Whorl				Arch	Total score
				Circular	Spiral	Pocket (composite)	Double		
1	Nguyễn Việt	Anh	2	2	5	1	0	0	10
2	Trần Ngọc Phương	Anh	10	0	0	0	0	0	10
3	Châu Kim	Anh	2	5	1	0	2	0	25
4	Vương Hoài	An	5	0	2	0	3	0	30
5	Trần Thiên	Bảo	6	0	0	1	3	0	30
6	Hoàng Gia	Bảo	4	6	0	0	0	0	10
7	Trương Ngọc Diễm	Hằng	5	4	0	1	0	0	10
8	Hoàng Gia	Huy	0	5	5	0	0	0	10
9	Nguyễn Khánh	Hưng	8	1	0	0	1	0	20
10	Trần Phạm Huyền	Linh	8	0	0	2	0	0	10
11	Lê Trà	My	4	1	3	2	0	0	10
12	Đinh Hồng	Ngọc	10	0	0	0	0	0	10
13	Nguyễn Võ Quỳnh	Như	2	4	4	0	0	0	10
14	Lê Hoàng	Phong	2	2	3	0	3	0	30
15	Thái Thịnh Hồng	Phú	0	1	2	1	6	0	30
16	Huỳnh Tiên	Phước	2	0	0	4	4	0	30
17	Nguyễn Chê	Thanh	8	0	0	0	2	0	25
18	Tôn nữ Thanh	Thanh	7	0	0	3	0	0	10
19	Lê Thị Bích	Thy	4	0	0	4	2	0	25
20	Phạm Nhật Phương	Trình	3	0	0	5	2	0	25
21	Trần Ngọc Thúy	Vì	7	1	1	0	1	0	20
22	Nguyễn Ngọc Anh	Vy	6	0	0	2	2	0	25
23	Phan Thảo	Yên	4	0	2	0	4	0	30
Total			111/230	35/230	26/230	24/230	34/230	0	445
percentage (%)			48.26	15.22	11.3	10.42	14.8	0	19.35
percentage (%) of 3 types of fingerprint			48.26	51.74				0	

Chi Minh City's Aerobic Gymnastic team, the results of fingerprint assessment are in Table 2.

Table 2 shows that the appearance of 3 types of fingerprints is: The loop patterns reach to 48.26%, the whorl pattern reach to 51.74 and the Arch pattern reach 0%. Make a comparison we

can see, the whorl pattern ranks first, ranks second is the loop pattern, and the final is the arch pattern. Based on the abbreviation of three types of fingerprints, they are the following: W> L> A.

The average score of athletes in HCMC's Aerobic Gymnastic team is 19.35 / 30. Six athletes

score 30/30, five athletes win 25/30, 2 athletes score 20/30. It proves that all most of athletes in HCMC's Aerobic Gymnastic team convergence sufficient fingerprints features of elite athletes. Six athletes win the highest score, which prove that they have innate ability, good qualities and great potential for Aerobic and Gymnastic.

Detail analysis:

The single Loop pattern: Two female athletes Hong Ngoc and Phuong Anh have single loop pattern on their ten fingers, reach to 100% ($L > W = A = 0$). Both of them have specific fingerprints; the second is Khanh Hung, Che Thanh and Huyen Linh with 8/10 fingerprint loop patterns; the third is Thuy Vi and Thanh Thanh with 7/10 fingerprint loop patterns.

Pocket-shaped/composite whorl patterns:

The appearance of pocket-shaped patterns is 15.22%. Based on the analyzed physiological basis above, it shows that pocket-shaped loop pattern is a medium complex fingerprint (level 4/7). Athletes who have this type of fingerprints have good central nervous system, well-developed neurons, high speed of neural flexibility, and good receptivity. This is also an advantage of athletes in aerobic Gymnastic training and competing.

The circular whorl pattern:

Ho Chi Minh City's Aerobic Gymnastic Athletes have circular whorl patterns' ratio reach to 15.22%. Liaoning Province, China's Tennis athletes have the ratio of 27% for male and 30% for female (Yu Wen Qian, Tai Feng 2012). Thus, compared with the tennis elite Tennis player in Liaoning- China, Ho Chi Minh City's Aerobic Gymnastic athletes have a lower appearance of rounds, indicating that the relative physical strength of the upper limb better.

The spiral whorl pattern:

The spiral whorl pattern ranks the sixth in the complexity of fingerprint. It shows that the athletes having this type of pattern have good neurological, the nerve cells develop dramatically, high neurological ability and good receptivity. They also have good achievement like Viet Anh - 22-years old (1 world silver medal in 2016, 3 Asia gold medals in 2017, 1 world silver, 1 world bronze medals in 2017),

18-year-old Hoang Phong (3 Asia gold medals 2017, 1 world silver, bronze medals in 2017).

Double loop pattern:

Ho Chi Minh City's Aerobic Gymnastic Athletes have the double loop pattern is 14.8%, higher than the normal level of Chinese elite athletes (10%). The results show that Aerobic Gymnastic athletes in Ho Chi Minh City have the ability to coordinate movement, good speed and high neurotic flexibility. This is in line with Aerobic Gymnastic characteristics. Therefore, this is an important fingerprint criterion in the athlete selection. The athletes who have double loop pattern also have achieved excellent results in the international arena as: Hoai An, 20 years old (1 world silver medal, 1 world bronze medal in 2016, 1 world silver medal, 1 world bronze medal in 2017), Che Thanh - 17 years old (2 world gold medals in 2016, 1 Asia gold medal in 2017)

There is no one in Ho Chi Minh City's Aerobic Gymnastic Athletes team have arch pattern (rate 0%). It proves that these athletes have good strength. This also means that the circulatory and respiratory system functions (oxygen-transportable) are good. This is an outstanding feature and a huge difference in the fingerprint of Ho Chi Minh City's Aerobic Gymnastic Athletes.

CONCLUSION

The results showed that Athletes' fingerprints of Ho Chi Minh City's Aerobic Gymnastic team mainly focused on two groups: Fingerprint loop pattern and fingerprint whorl pattern. These types of athletes converge fairly well on the characteristics of fingerprint of elite athletes, reflecting the innate genetic factors of functional abilities, good qualities and great potential in Aerobics Gymnastic.

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