Research Paper Physical Education

Analyses of Finger Pattern of All India Varsity Netball Players

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ABSTRACT

The present study aims to examine the dermatoglyphic finger pattern among different positional players of all India varsity men netball players. To achieve the purpose of the study hundred and forty (N=140) men netball players were selected as subjects, who are participated in the All India Inter University Netball Tournament held at Annamalai University, Annamalainagar , Chidambaram ,Tamilnadu from 20th February to 02nd March 2015. The age of the subjects ranged from 18 to 28 years. The dermatoglyphic finger patterns like Whorls, Loops and Arches are selected as dependent variables. The identifying finger patterns are follows by the standard procedure using Cummins ink method. The number of patterns from all 10 fingers were counted and added separately. Thus, an individual's total of all patterns will be ten, which may or may not show whorls, loops and arches. The players (subjects) were classified as in 7 groups and 20 subjects in each group namely Group –1: Centre (C), Group-2: Wing defence (WD), Group-3: Wing Attack (WA), Group-4: Goal Defence (WD), Group-5: Goal Keeper (GK), Group-6: Goal Attack (GA) and Group-7: Goal Shooter (GS). For the purpose of the identifying the finger nomenclature was given as, Digit-I thumb, Digit-II index finger, Digit-III middle finger, Digit- IV ring finger and Digit-V little finger. The collection of data was analyzed by using analysis of variance (ANOVA) to find out the significance among the players. The scheffe's post hoc test was applied to know the significance difference whenever they obtained 'f' ratio found significant. The level of confidence was fixed at 0.05. The result shows that there was no significant difference found on wholes and arches among varsity netball players. The result also shows loops are found significant difference among varsity netball players.

KEYWORDS | Dermatoglyphics, Finger Pattern, Netball, Men.

INTRODUCTION

The study of dermal ridges on palms and toes is known as Dermatoglyphics. Dermatoglyphics is a science about peculiarities of dermal ridges constructions on human and primate fingers and hands as well as on feet and toes. Dermatoglyphics research can be perspective in different fields of knowledge (Sergienko, 2012) such as Clinical medicine, Forensic medicine, Psychophysiology, Morphology, Physical education and sports, etc.

Dermatoglyphical markers can help to determine level of strength, coordination, speed abilities and aptitude for endurance and flexibility of joints. Dermatoglyphics is used for the selection of sports by evaluating the prospect of a child for doing certain kind of sports activity. Considering the high informational character of dermatoglyphics in genetic prognostication, it has been proved that the representatives of different kinds of sports have their peculiar dermal ridges of fingers and hands in scientific researches (Abramova, 2003).

The Dermatoglyphic features may be used as a suggestive diagnostic tool to make a provisional diagnosis to identify the persons who are at risk of some ailments and to check the performance among athletes of different sports activities. But it requires more extensive studies in a large number of patients as well as athletes (Sharma and Sharma, 2012).

Netball is a ball sport played by two teams of seven players. Its development, derived from early versions of basketball, began in England in the 1890s. By 1960, international playing rules had been standardized for the game, and the International Federation of Netball and Women's Basketball (later renamed the International Netball Federation (INF)) was formed. From the start, it was considered socially appropriate for women to play netball; netball's restricted movement appealed to contemporary notions of women's participation in sports, and the sport was distinct from potential rival male sports (Taylor, Tracy , 2001).

Each team is allowed seven players on the court. Each player is assigned a specific position, which limits their movement to a certain area of the court. A "bib" worn by each player contains a two-letter abbreviation indicating this position. Only two positions are permitted in the attacking shooting circle, and can therefore shoot for a goal. Similarly, only two positions are permitted in the defensive shooting circle; they try to prevent the opposition from shooting goals. Other players are restricted to two thirds of the court, with the exception of the Centre, who may move anywhere on the court except for a shooting circle. Hence, the process of talent identification of talent in sports must lay emphasis on identification of general qualities, formulation of testing method and criteria to measure the inherited qualities that are required to make an individual champion sportsman.

General characteristics of a person in relation to certain qualities are reflected in dermatological pattern. The dermal ridges and finger print patterns, which form the dermatoglyphic characteristic can be studied qualitatively with relative ease, as it has also been seen it the traits of dermatoglyphic are inherited, these patterns may be established in early stages of sports person showing talent qualities regarding a specific sports. The purpose of the present study was to analyze the finger print pattern (dermatoglyphic) pattern of analyses of finger print pattern of all India varsity netball players.

METHODOLOGY

To achieve the purpose of the study hundred and forty (N=140) men netball players were selected as subjects, who are participated in the All India Inter University Netball Tour-

nament held at Annamalai University, Annamalainagar , Chidambaram ,Tamilnadu from 20th February to 02nd March 2015. The age of the subjects ranged from 18 to 28 years. The dermatoglyphic finger patterns like Whorls, Loops and Arches are selected as dependent variables. The identifying finger patterns are follows by the standard procedure using Cummins ink method. The number of patterns from all 10 fingers were counted and added separately. Thus, an individual's total of all patterns will be ten, which may or may not show whorls, loops and arches. The players (subjects) were classified as in 7 groups and 20 subjects in each group namely Group –1: Centre (C), Group-2: Wing defence (WD), Group-3: Wing Attack (WA), Group-4: Goal Defence (WD), Group-5: Goal Keeper (GK), Group-6: Goal Attack (GA) and Group-7: Goal Shooter (GS). For the purpose of the identifying the finger nomenclature was given as, Digit-I thumb, Digit-II index finger, Digit-III middle finger, Digit- IV ring finger and Digit-V little finger. The collection of data was analyzed by using analysis of variance (ANOVA) to find out the significance among the players. The scheffe's post hoc test was applied to know the significance difference whenever they obtained 'f' ratio found significant. The level of confidence was fixed at 0.05.

Figure
FINGER PATTERNS

RESULTS
Table - I
Mean and SD on finger patterns of different positional players in netball

Finger Patterns	Test	Centre	Wing Defence	Wing Attack	Goal Defence	Goal Keeper	Goal Attack	Goal Shooter
Right Hand Whorl	Mean	1.75	1.75	2.10	2.45	2.95	2.70	2.50
	SD	1.48	1.48	1.29	1.60	1.19	1.71	1.50
Right Hand Loop	Mean	1.46	1.46	1.33	1.36	1.16	1.65	1.43
	SD	0.32	0.32	0.29	0.30	0.26	0.36	0.32
Right Hand Arch	Mean	0.05	0.05	0.15	0.40	0.05	0.05	0.35
	SD	0.22	0.22	0.36	0.68	0.22	0.22	0.93
Left Hand Whorl	Mean	1.50	1.50	1.70	2.50	2.40	2.25	2.45
	SD	1.27	1.27	1.34	1.70	1.46	1.80	1.09
Left Hand Loop	Mean	3.50	3.50	3.25	2.15	2.50	2.65	2.35
	SD	1.27	1.27	1.37	1.53	1.46	1.69	0.98
Left Hand Arch	Mean	0.00	0.00	0.05	0.35	0.10	0.05	0.20
	SD	0.00	0.00	0.22	0.67	0.30	0.22	0.89

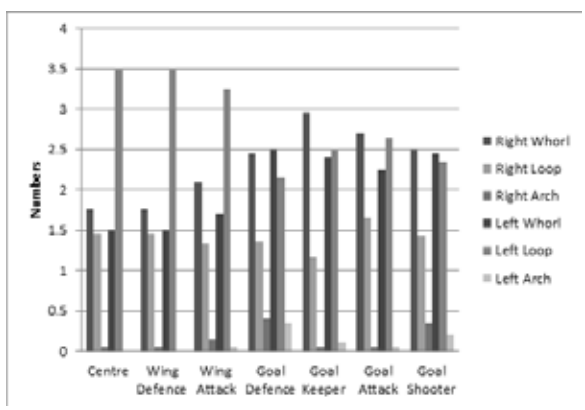
TABLE - II
ANOVA ON FINGER PATTERNS OF DIFFERENT POSITIONAL PLAYERS IN NETBALL

Finger Patterns	SOV	SS	Df	MS	F
Right Hand Whorl	B	25.771	6	4.295	1.96
	W	290.400	133	2.183	
Right Hand Loop	B	27.886	6	4.648	2.31*
	W	267.000	133	2.008	
Right Hand Arch	B	2.843	6	0.474	1.98
	W	31.700	133	0.238	
Left Hand Whorl	B	25.043	6	4.174	2.01
	W	276.700	133	2.080	
Left Hand Loop	B	37.451	6	6.242	3.23*
	W	254.376	133	1.927	
Left Hand Arch	B	1.943	6	0.324	1.56
	W	27.450	133	0.206	

***Significant**
The table value of 6 and 133 is 2.17

The table-ll shows that there was no significant difference among different position netball players (DPP), such as C, WD, WA, GD, GK, GA, and GS on right hand and left hand whorls and right hand and left hand arches. The result also shows that that there was a significant difference found on right hand and left hand loop among netball players irrespective it positions. Further, the obtained 'F' ratio shows significant on right and left hand loops. The Scheffe's post hoc test applied for find significance between groups in loops. The confidence internal value in right hand loop was 0.26, which was higher than the mean difference value between GK Vs C and GK Vs WD and found significant. The internal value in left hand loop was 0.25, which was higher than the mean difference value between C Vs GD and GD Vs WD the result of scheffe's test and found significant. The result shows that there was a similarity found on whorls and arch among in university netball players of DPP.

Figure Represents the Mean Value of Finger Patterns of both Right and Left Hand



DISCUSSION
The various studies found relation with based on the present result were discussed below. However, minimum numbers of study in association with sports. Dermatoglyphics have also been shown to have ethnic and racial variations (Shield J.P, 1995). Dermatoglyphics analysis has been investigated as a useful diagnostic and research tool in medicine and provides valuable insight on the inheritance and embryologic formation of many known clinical disorders (Schaumann and Optiz, 1991). The relationship between bone dimension and dermal ridge patterns has been subject matter of many studies. There are interactive reasons and empirical evidence indicating that some individuals are highly endowed with respect to one or several biological properties associated with sports performance, while others are less endowed. Here the finger patterns are unchanged among the different netball players.

CONCLUSION
- The study concluded with following
- The whorls and arches show similar for all India inter University men netball players.
- The GK have lesser number of loops when compare with C and WD in right hand and the GD have lesser number of loops when compare with C and WD in left hand .
- The C and WD have more number of loops in both right and left hand respectively. There was some association between C and WD that may be follow when the analysis of finger pattern for selection of players.
- The GK, GA and GS have slightly more number of whorls in right hand and also GD, GK & GS have slightly more number of whorls in left hand.
- The arches are present very less number (range from 0.00 to 0.40) irrespective at DPP in both right hand and left hand.

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