International Journal of Physiology, Nutrition and Physical Education

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Analysis on Dermatoglyphics among women netball players

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Abstract
The purpose of the present study was to analyze on Dermatoglyphics among women netball players. The data were collected from one hundred and fifty women netball players. Under 16 age, under 19 age and above 19 age women netball players were selected. Each categories fifty players were selected. The Dermatoglyphics variables are ridge count and ATD angle and it were measured by the Cummins ink method and protractor respectively. The data on selected criterion variables were statistically analyzed by analysis to variance (ANOVA) was use to find out the significant difference among netball players on selected criterion variables on different age category. The Turkey post hoc test will apply to know the paired mean difference between groups, if they obtained 'f' value found significant on criterion variable. The result of the study stated that there is statistically significant difference at test period among the under 16 age, under 19 age and above 19 age groups of women netball players on ridge count and ATD angle.

Keywords: Dermatoglyphics, Ridge count, ATD and Netball, Players

Introduction

Dermatoglyphics is the scientific study of fingerprints, lines, mounts and shapes of hands, as distinct from the superficially similar pseudoscience of palmistry. Dermatoglyphics also refers to the making of naturally occurring ridges on certain body parts, namely palms, fingers, soles, and toes. These are areas where hair usually does not grow, and these ridges allow for increased leverage when picking up objects or walking barefoot. In a 2009 report, the scientific basis underlying Dermatoglyphics was questioned by the National Academy of Sciences, for the discipline's reliance on subjective comparisons instead of conclusions drawn from the scientific method (NAS, 2016) [3].
Man's curiosity in the field of Dermatoglyphics goes back through centuries when Chinese used it as a basis for fortune telling. About the same period, ancient Indians believed that the presence of ten whorls destined a person to be a Chakravarti meaning "an emperor (Athanikar, 1986) [1]. In 1684, a learned and ingenious physician, Nehemiah Grew, published the first description of the epidermal ridges which make characteristic patterns when prints are taken of fingertips.

Methodology

The purpose of the present study was to analyze on Dermatoglyphics among women netball players. The data were collected from one hundred and fifty women netball players. Under 16 age, under 19 age and above 19 age women netball players were selected. Each categories fifty players were selected. The dermatoglyphics variables are ridge count and ATD angle and it were measured by the Cummins ink method and protractor respectively. The data on selected criterion variables were statistically analyzed by analysis to variance (ANOVA) was use to find out the significant difference among netball players on selected criterion variables on different age category. The Turkey post hoc test will apply to know the paired mean difference between groups, if they obtained 'f' value found significant on criterion variable.

Results

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Table 1: Analysis of variance on ridge count of different age groups of netball Players

		Under 19 Age	Above 19 Age	SOV	Sum of Squares	DF	Mean squares	'F' ratio
Mean SD	16.06	14.88	14.10	B	97.37	2	48.68	51.63*
	0.81	0.84	1.19	W	138.60	147	0.94	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 147 is 3.06)   *Significant at .05 level of confidence

Table-1 shows that the test mean and standard deviation on ridge count of different age group of women netball players are 16.06 ± 0.81, 14.88 ± 0. 84 and 14.10 ± 1.19 respectively. The obtained 'F' ratio value of 51.63 for test means on ridge count of different age groups (under 16 age, under 19 age and above 19 age) were higher than the required table value of 3.06 for the degrees of freedom 2 and 147 at 0.05 level of confidence. It reveals that there is statistically significant difference at test period among the under 16 age, under 19 age and above 19 age groups of women netball players on ridge count.

Table 2: Turkey Post Hoc test on ridge count of different age groups of netball players

(I) group	(J) group	Mean Difference (I-J)	Sig.
1.00 (Under16)	2.00	1.18000*	.000
	3.00	1.96000*	.000
2.00(Under19)	1.00	-1.18000*	.000
	3.00	.78000*	.000
3.00(Above19)	1.00	-1.96000*	.000
	2.00	-.78000*	.000

* The mean difference is significant at the 0.05 level

Table-2 shows the Turkey Post Hoc test results that there are significant differences between the means values of under 16 age and under 19 age groups women netball players; under 16 age and above 19 age groups women netball players; under 19 age and above 19 age groups women netball players on ridge count. The result found that under 19 age group of netball players had more ridge counts than under 16 age and above 19 age groups players.

Fig I: Cylinder diagram showing the mean value on ridge count of different age groups netball players

ATD Angle

Table 3: Analysis of variance on ATD angle of different age groups netball players

		Under 19 Age	Above 19 Age	SOV	Sum of Squares	DF	Mean squares	'F' ratio
Mean SD	30.48	33.88	36.56	B	928.48	2	464.24	277.32*
	1.05	0.84	1.78	W	246.08	147	1.67	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 147 is 3.06) *Significant at .05 level of confidence

Table-3 shows that the test mean and standard deviation on ATD angle of different age group of women netball players are 30.48 ± 1.05, 33.88 ± 0. 84 and 36.56 ± 1.78 respectively. The obtained 'F' ratio value of 277.32 for test means on ATD angle of different age groups (under 16 age, under 19 age and above 19 age) were higher than the required table value of 3.06 for the degrees of freedom 2 and 147 at 0.05 level of confidence. It reveals that there is statistically significant difference at test period among the under 16 age, under 19 age and above 19 age groups of women netball players on ATD angle.

age and under 19 age groups women netball players; under 16 age and above 19 age groups women netball players; under 19 age and above 19 age groups women netball players on ATD angle. The result found that under 16 age group of netball players had lower ATD angle than under 19 age and above 19 age groups players.

Fig II: Cylinder diagram showing the mean value on ATD angle of different age groups netball players

Discussion and Conclusion
Ridge Count
Finding reveals that there is statistically significant difference at test period among the under 16 age, under 19 age and

Table 4: Turkey post hoc test on ATD angle of different age groups of netball players

(I) group	(J) group	Mean Difference (I-J)	Sig.
1.00 (Under16)	2.00	-3.40000*	.000
	3.00	-6.08000*	.000
2.00(Under19)	1.00	3.40000*	.000
	3.00	-2.68000*	.000
3.00(Above19)	1.00	6.08000*	.000
	2.00	2.68000*	.000

* The mean difference is significant at the 0.05 level.

Table-4 shows the Turkey Post Hoc test results that there are significant differences between the means values of under 16

above 19 age groups of women netball players on ridge count. The result found that under 19 age group of netball players had more ridge counts than 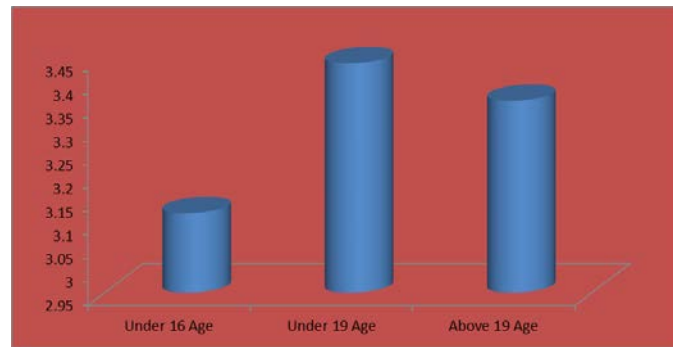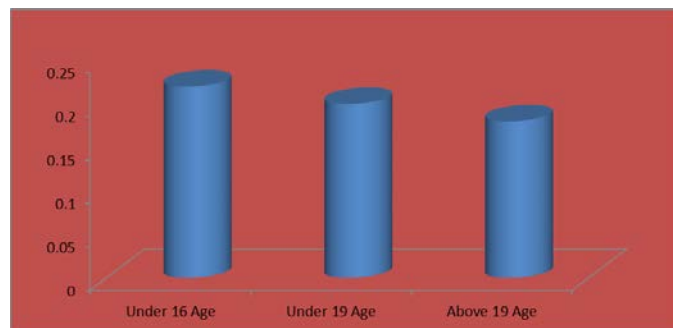under 16 age and above 19 age groups players. The following studies are supporting our results. Garima (2016) [2] Dermatoglyphics is the study of unique lines and patterns on the palms, fingers, soles and toes of an individual. It can help in assessment of intrauterine irregularities and prenatal detection of disorders. This branch is relatively recent, still in its infancy, and requires further research to validate its role in dental field.

ATD Angle
Finding reveals that there is statistically significant difference at test period among the under 16 age, under 19 age and above 19 age groups of women netball players on ATD angle. The result found that under 16 age group of netball players had lower ATD angle than under 19 age and above 19 age groups players. The following studies are supporting our results. Neda and others 2016 [3] compared the dermatoglyphics characteristics of different malocclusions. A significant difference was determined between Class I and Class III patients in terms of left a–b ridge count (p=0.049). Loop was the most frequent pattern in the three groups, whereas the arch pattern occurred with the lowest frequency.

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