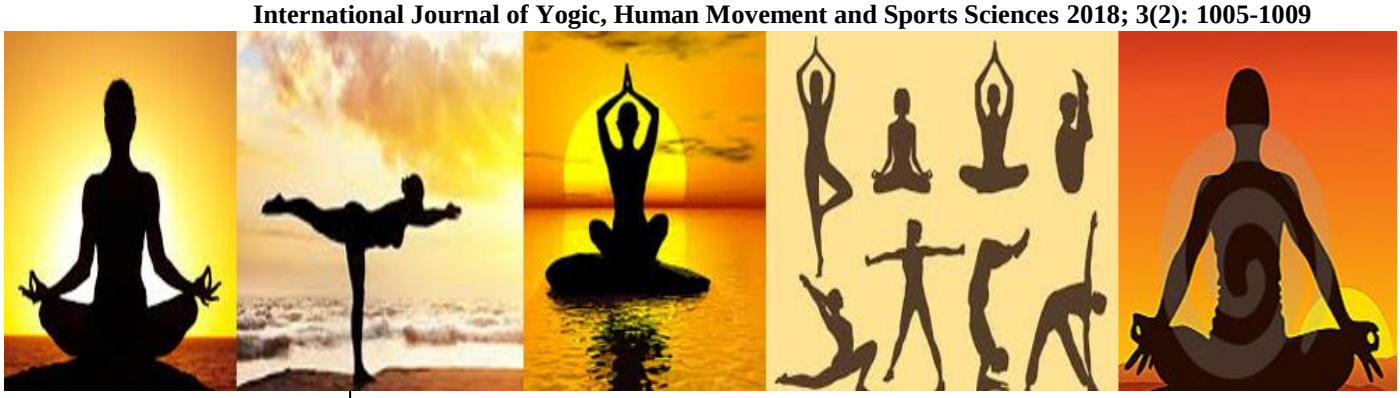
International Journal of Yogic, Human Movement and Sports Sciences 2018; 3(2): 1005-1009



ISSN: 2456-4419
Impact Factor: (RJIF): 5.18
Yoga 2018; 3(2): 1005-1009

www.theyogicjournal.com
Received: 03-06-2018
Accepted: 05-07-2018

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Profile of selected anthropometric measurement among inter university football players

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Abstract
The purpose of this study the profile of Anthropometric Measurement among Inter University Football Players performance of defending skill on the basis of selected anthropometric measurements. Sixty male football players were selected as subjects for this study. The subjects were selected from Top four teams of west zone inter university players. Subjects were divided into three groups (each group consists of twenty players) on the basis of their position of play. Total number of subjects (N=60) each groups twenty (20) subjects Defenders, .Midfielders, Attackers. The age levels of the subjects were ranged from 18 to 25 years. All the subjects belong to different social economic conditions. Selection of variables Anthropometric measurements Body weight, Standing height, Arm length Leg length, Fore-leg length. Thigh girth, Calf girth, Foot length. According to objectives of the study to gathering the data Analysis of descriptive statistics were used. (Mean Standard Deviation). Significant was set at 0.05. The results of the study have shown that was significance mean difference on body weight, standing height, Arm length, leg length, fore leg length, and foot length, anthropometric measurements between attacker and defender respectively. The results of the study have also shown that there was significance mean difference on body weight, arm length, leg length, and fore leg length midfielder and defender on their anthropometric measurements. The results of this study have shown that there was no significance difference on body weight, standing height, arm length, leg length, fore leg length, thigh girth, calf girth and foot length, defender and midfielder anthropometric measurements.

Keywords: Anthropometric, measurements, football, Attacker, defender, respectively, arm length, weight, height, etc

Introduction
Anthropometric measurements were central concerns of the first phase of the scientific era of measurements, which have been began in the 1860's.Current interest in anthropometric measurements focus in three areas, girth measures and body type and body composition. The assessment of such measures includes classification, prediction of growth patterns and prediction of success in motor activities as well as assessment of ability [1].
The existing literature in the field of football shows that standing height, body weight, arm length, leg length, waist circumference, hip circumference, thigh circumference, calf circumference, shoulder width, acromial diameter, fore arm circumference, feet breath, palm width, chest circumference, body composition are important pre-requisites for efficient football performance, whereas excess body fat proves to be a hindrance [2].

Football
Football is a family of team sports that involve, to varying degrees, kicking a ball to score a goal. Unqualified, the word *football* normally means the form of football that is the most popular where the word is used. Sports commonly called *football* include association football (known as *soccer* in some countries); gridiron football (specifically American football or Canadian football); Australian rules football; rugby football (either rugby union or rugby league); and Gaelic football [1, 2]. These various forms of football share to varying extent common origins and are known as football codes.

Objectives of the study

- To describe the performance of defending skill of football players on the basis of selected Anthropometric measurements.

Methodology

Sixty male football players were selected as subjects for this study. The subjects were selected from Top four teams of west zone inter university players. Subjects were divided into three groups (each group consists of twenty players) on the basis of their position of play.

1. Defenders-20
2. Midfielders-20
3. Attackers-20

The age levels of the subjects were ranged from 18 to 25 years. All the subjects belong to different social economic conditions.

Selection of variables

The following anthropometric measurements were selected for the purpose of the study.

Anthropometric measurements

1. Body weight
2. Standing height
3. Arm length
4. Leg length
5. Fore-leg length
6. Thigh girth
7. Calf girth
8. Foot length

Criterion measures

The following criterion measures chosen for testing the hypothesis were.

Anthropometric Variable

- **Body weight:** It was recorded correct to nearest half kilograms with the help of the weighing machine.
- **Standing height:** Standing height was recorded to the nearest half centimetre, with the help of wall scale.
- **Arm length:** It was recorded correct to the nearest half centimetre, with the help of flexible steel tape.
- **Leg length:** Leg length was recorded correct to the nearest half centimetre with the help of flexible steel tape.
- **Fore-leg length:** It was recorded correct to the nearest half centimetre, with the help of flexible steel tape.
- **Thigh girth:** Thigh girth was recorded correct to the nearest half centimetre with the help of flexible steel tape.
- **Calf girth:** Calf girth was recorded correct to the nearest half centimetre with the help of flexible steel tape.
- **Foot length:** It was recorded correct to the nearest half centimetre, with the help of flexible steel tape.

Statistical Analysis

- According to objectives of the study to gathering the data Analysis of descriptive statistics were used. (Mean Standard Deviation). Significant was set at 0.05

Findings and Results of the Study

Table 1: Descriptive Statistics of Body Weight

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	66.26	4.37	.978	64.21	68.31	52.50	72.80
Midfielder	20	64.28	3.36	.752	62.70	65.70	54.90	69.80
Defender	20	69.13	3.14	.703	67.66	70.60	63.10	74.70
Total	60	66.56	4.12	.532	65.49	67.62	52.50	74.70

Table 1 shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of Body Weight.

The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder & defender respectively) were: 66.26, 4.37, .978, 64.21, 68.31, 52.50, 72.80; 64.28, 3.36, 0.752, 62.70, 65.70, 54.90, 69.80; 69.13, 3.14, 0.703,67.66, 70.60, 63.10, 74.70.

Table 2: Descriptive Statistics of Standing Height

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	170.56	3.52	.78	168.91	172.20	159.50	174.10
Midfielder	20	168.05	2.98	.66	166.65	169.44	159.40	171.80
Defender	20	171.16	4.88	1.09	168.87	173.44	164.70	180.00
Total	60	169.92	4.04	.52	168.87	170.96	159.40	180.00

Table 2 shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of standing height.

The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 170.56, 3.52, 0.78, 168.91, 172.20, 158.50, 174.10; 168.05, 2.98, 0.66, 166.65, 169.44, 159.40, 171.80; 171.16, 4.88,1.09, 178.86, 173.44, 164.70, 180.00.

Table 3: Descriptive Statistics of Arm Length

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	29.81	1.46	.328	29.122	30.49	27.50	32.10

Midfielder	20	28.43	.888	.1986	28.014	28.84	26.50	30.50
Defender	20	29.50	1.55	.3484	28.77	30.23	27.90	33.00
Total	60	29.24	1.44	.186	28.87	29.62	26.50	33.00

Table 3 shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of arm length.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 29.81, 1.46, 0.328, 29.122, 30.49, 27.50, 32.10; 28.43, 0.888, .1986, 29.014, 28.84, 26.50, 30.50; 29.50, 1.55, 0.3484, 28.77, 30.23, 27.90, 33.00.

Table 4: Descriptive Statistics of Leg Length

					95% confidence interval for Mean			
	N	**Mean**	**SD**	**SE**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
Attacker	20	38.13	1.440	.322	37.460	38.809	34.10	40.20
Midfielder	20	36.75	.585	.130	36.476	37.024	35.00	37.40
Defender	20	38.37	1.592	.356	37.629	39.120	37.00	42.20
Total	60	37.75	1.445	.187	37.377	38.129	34.10	42.20

Table 4. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of leg length.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 38.13, 1.44, 0.322, 37.46, 38.809, 34.10, 40.20; 36.75, 0.585, 0.130, 36.476, 37.024, 35.00, 37.40; 38.37, 1.592, 0.356, 37.629, 39.120, 37.00, 42.20.

Table 5: Descriptive Statistics of Fore Leg Length

					95% confidence interval for Mean			
	N	**Mean**	**SD**	**SE**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
Attacker	20	20.21	1.106	.247	19.69	20.73	18.10	22.20
Midfielder	20	19.35	.474	.106	19.13	19.57	18.70	20.40
Defender	20	20.63	1.388	.310	19.98	21.28	19.10	23.20
Total	60	20.06	1.172	.151	19.76	20.37	18.10	23.20

Table 5. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of fore leg length.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 20.21, 1.106, 0.247, 19.69, 20.73, 18.10, 22.20; 19.35, 0.474, 0.106, 19.13, 19.57, 18.70, 20.40; 20.63, 1.388, .0310, 19.98, 21.28, 19.10, 23.20.

Table 6: Descriptive Statistics of Thigh Girth

					95% confidence interval for Mean			
	N	**Mean**	**SD**	**SE**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
Attacker	20	19.95	1.32	.295	19.33	20.56	17.90	22.80
Midfielder	20	20.24	1.27	.286	19.64	20.84	18.90	22.80
Defender	20	20.64	1.02	.229	20.15	21.12	18.90	22.00
Total	60	20.27	1.22	.158	19.96	20.59	17.90	22.80

Table 6. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of thigh girth.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 19.95, 1.32, 0.295, 19.33, 20.56, 17.90, 22.90; 20.24, 1.27, 0.286, 19.64, 20.84, 18.90, 22.80; 20.64, 1.02, 0.229, 20.15, 21.12, 18.90. 22.00.

Table 7: Descriptive Statistics of Foot Length

					95% confidence interval for Mean			
	N	**Mean**	**SD**	**SE**	**Lower Bound**	**Upper Bound**	**Min**	**Max**
Attacker	20	9.76	.540	.120	9.51	10.01	8.80	10.50
Midfielder	20	9.66	.427	.095	9.46	9.86	8.90	10.40
Defender	20	10.09	.266	.059	9.97	10.21	9.60	10.60
Total	60	9.84	.458	.059	9.72	9.95	8.80	10.60

Table 7. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of foot length.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 9.76, 0.540, 0.120, 9.51, 10.01, 8.80, 10.50; 9.66, 0.427, 0.095, 9.46, 9.86, 8.90, 10.40; 10.09, 0.266, 0.059, 9.97, 10.21, 9.60, 10.60.

Table 8: Descriptive Statistics of Thigh Girth

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	19.95	1.32	.295	19.33	20.56	17.90	22.80
Midfielder	20	20.24	1.27	.286	19.64	20.84	18.90	22.80
Defender	20	20.64	1.02	.229	20.15	21.12	18.90	22.00
Total	60	20.27	1.22	.158	19.96	20.59	17.90	22.80

Table 8. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of thigh girth.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 19.95, 1.32, 0.295, 19.33, 20.56, 17.90, 22.90; 20.24, 1.27, 0.286, 19.64, 20.84, 18.90, 22.80; 20.64, 1.02, 0.229, 20.15, 21.12, 18.90. 22.00.

Table 9: Descriptive Statistics of Calf Girth

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	13.75	.458	.102	13.53	13.96	12.70	14.50
Midfielder	20	13.91	.401	.089	13.72	14.09	12.90	14.50
Defender	20	13.81	.486	.108	13.58	14.04	12.60	14.50
Total	60	13.82	.447	.057	13.70	13.94	12.60	14.50

Table 9 shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of calf girth.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 13.75, 0.485, 0.102, 13.53, 13.96, 12.70, 14.50; 13.91, 0.401, 0.089, 13.72, 14.09, 12.90, 14.50; 13.81, 0.486, 0.108, 13.58, 14.04, 12.60, 14.50.

Table 10: Descriptive Statistics of Foot Length

					95% confidence interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max
Attacker	20	9.76	.540	.120	9.51	10.01	8.80	10.50
Midfielder	20	9.66	.427	.095	9.46	9.86	8.90	10.40
Defender	20	10.09	.266	.059	9.97	10.21	9.60	10.60
Total	60	9.84	.458	.059	9.72	9.95	8.80	10.60

Table 10. shows the descriptive statistics ((i.e. Mean, Standard Deviation, and Standard error of mean, Lower bound, upper bound, minimum and maximum) of scores of foot length.
The mean, Standard deviation, standard error of mean, lower bound, upper bound, minimum and maximum scores of body weight of football players on the basis of their playing position (attacker, midfielder and defender respectively): 9.76, 0.540, 0.120, 9.51, 10.01, 8.80, 10.50; 9.66, 0.427, 0.095, 9.46, 9.86, 8.90, 10.40; 10.09, 0.266, 0.059, 9.97, 10.21, 9.60, 10.60.

Discussion of Findings

The reason of these differences can be associated with above results this is probably due to the different nature of the physical components training and pre-requisite for students. Number of participation and level of participation. The reason may be attributed that the physically trained student or level of achievements and taken deferent types nutrition food. These results may be due to a small sample of size and other factors such as different types of body, differences in body composition. These results may be nutrition diet schedule deference. The reason may be Psychological variables like stress, sports competition anxiety, aggression, fear, motivation confidence, attention concentration etc.

Conclusion

On the basis of the results following conclusions are drawn from the study:
The results of the study have shown that the there was significance mean difference on body weight, standing height, Arm length, leg length, Fore leg length, and foot length, anthropometric measurements between attacker and defender respectively.
The results of the study have also shown that there was significance mean difference on body weight, arm length, leg length, and fore leg length midfielder and defender on their anthropometric measurements.
The results of this study have shown that there was no significance difference on body weight, standing height, arm length, leg length, fore leg length, thigh girth, calf girth and foot length, defender and midfielder anthropometric measurements.

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