International Journal of Physical Education, Sports and Health 2021; 8(2): 198-204

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2021; 8(2): 198-204

www.kheljournal.com
Received: 12-01-2021
Accepted: 27-02-2021

Dr. Rajkumar G Karve
Assistant Professor of Physical Education and HOD, Department of Physical Education, College of Agriculture, Kalaburagi, Karnataka, India

Corresponding Author:
Dr. Rajkumar G Karve
Assistant Professor of Physical Education and HOD, Department of Physical Education, College of Agriculture, Kalaburagi, Karnataka, India

An investigation on the selected anthropometric variables of UAS Raichur sports persons

Dr. Rajkumar G Karve

Abstract
Physical educationists, coaches and sports scientists have always expressed a great need to know more about those anthropometry variables, which are helpful in improving the motor skill of the players. Today's world is a world of competition, the rivalry to reach top and excel each other is so much that every aspect that contributes for the excellence is carefully looked in it one of such aspects is the selection of the right person for the right event in sports and games, normally a choice of selection is given to that the player or the athletes.
The present study aims to find out the differences in the anthropometric measurements among sports persons of UAS, Raichur. To achieve the purpose of the study total 300 sports persons were selected in the various disciplines of sports from different colleges of UAS, Raichur. The selected anthropometric measurements like biceps circumference, arm length, leg length and thigh circumference were chosen. The data is collected with the help of measuring tape and paired statistical technique is used to analyze the data. The results of the study shown significant differences in the selected anthropometric measurements among the sports persons of UAS, Raichur.

Keywords: Anthropometric variables, the athletes, biceps circumference

Introduction
Sports has emerged as a discipline not merely to discuss performance, techniques or records but also to study it as a means by which greater societal forces may be analyzed and through which various problems may be remedied.
Sports in the present day have become extremely competitive, previous records are being broken whenever there is competition. It is not mere participation or few days' practice that brings an individual victory, but the continuous hard work of training right from childhood and a strong anthropometry variables may influenced. Today's sports person faces some unique challenges, the standards are higher, and the competition is tougher the stakes are greater attention in these days.
Physical educationists, coaches and sports scientists have always expressed a great need to know more about those anthropometry variables, which are helpful in improving the motor skill of the players. Today's world is a world of competition, the rivalry to reach top and excel each other is so much that every aspect that contributes for the excellence is carefully looked in it one of such aspects is the selection of the right person for the right event in sports and games, normally a choice of selection is given to that the player or the athletes. The players without knowing their inherent potential made wrong choices because of his wrong selection the individual concern is not able to reach the top of the ladder (Gangopadhyay, 1993).
The preparation of an athlete today for achievement is a complex dynamic matter, characterized by a high level of physical and physiological efficiency and the degree of perfection of necessary skill and knowledge and proper teaching and tactics. An athlete arrives at this state only as a result of corresponding training sports activity in this respect is an activity directed at steadily enhancing the preparation of an athlete and grooming him for a higher level achievement.
Many other factors are also brought into action in his preparation such as special nutrition; organization of a general region in accordance with conditions of sports activity rehabilitation after injury etc.

Thus athletes training today is a multisided process of expedient use of aggregate factors so as to influence the development of an athlete (Matveyer, 1981).

Anthropometrical parameters are very essential in the sports and games where the players have to perform with endurance and strength endurance for a longer period with breathing mechanism along with lot of concentration, attention and mental toughness. Anthropometrical, physical fitness, psychological and physiological characteristics play an important role in deciding the performance level and also they have their importance in the field of sports and games.

Keeping in view of the above facts the present investigation is taken into consideration to find out the better means and methods of training for the UAS, Raichur sports persons to uplift their performance level at the national level sports and games competitions.

Statement of the Problem

The research problem entitled "An investigation on the selected anthropometric variables of UAS Raichur sports persons".

Objectives of the study

- To measure the selected anthropometric variables of UAS Raichur sports persons.
- To compare differences in the selected anthropometric measurements of sports persons from different colleges of UAS Raichur.
- To suggest and recommend better means and methods of sports training to enhance their present level of performance.

Materials and Methods

The methodological aspects related to the present investigation have been described. The procedure and methods applied in selection of subjects, selection of variables, selection of tests, instrument reliability of data, orientation of the subjects, collection of data, test administration, experimental design and statistical technique are presented below.

Selection of Subjects

The total 300 samples i.e., 60 players each from 4 U.G colleges and 1 P.G studies of UAS, Raichur were selected by random sampling method.

Table 1: Sample Design

College/PGS	No. of Subjects
PGS	60
ACR	60
CAE	60
ACB	60
ACK	60
Total	300

Selection of variables

The researcher had gone through the available literature and had discussions with various experts before selecting variables. The availability of technique for the purpose of analysis, feasibility, reliability of the procedure and the outcome were extensively taken care before finalizing the variables. After analysing the various factors associated with the present study anthropometric variables like biceps circumference, arm length, leg length and thigh circumference were selected.

Criterion variables

Each sport demands specific requirement of anthropometric measurements, physical, psychological and physiological capacities for successful performance, the importance of these parameters lays in the fact that in majority of the sports; it scores as the basis for good performance. The following anthropometric parameters were selected.

Anthropometric parameters:

- Biceps circumference
- Thigh circumference
- Arm length
- Leg length

Selection of tests

The selected anthropometric parameters and their respective tests were administered are presented in Table 1.

Table 1: List of Variables and their respective test

S. N.	Variables	Test
Anthropometric variables		
1.	Biceps circumference	Anthropometric measurement
2.	Thigh circumference	
3.	Arm length	
4.	Leg length	

Instrument reliability

In the present study standard equipments such as digital spirometer, measurement tape, stopwatch, stadiometer, weighing machine, cones etc were used.

Reliability of the Data

Test and retest method was followed in order to establish reliability of data by using 50 subjects at random. These 50 subjects were tested twice by the same person under similar conditions. Johnson and Nelson's intra-class co-efficient of correlation was used to find out the reliability of the data as suggested.

Orientation of the Subjects

The investigator explained the purpose of the study and the importance of the tests to the subjects in order to get their co-operation as well as to secure reliable data.

Collection of Data

The investigator was collected the data pertaining to the present research project from 300 samples i.e., 60 players each from 4 U.G colleges and 1 P.G studies of UAS, Raichur on the selected anthropometric variables like biceps circumference, arm length, leg length and thigh circumference.

Test Administration

The investigator administered the respective tests prior and post event duration during UAS Raichur Inter-Collegiate Tournaments. The investigator was collected of data related to present study in the following methods,

1. Measurement of Anthropometric variables

a) Measurement of Height

Purpose: To measure the maximum height.

Equipment Used: Stadiometer.


b) Measurement of arm length
Purpose: To measure the total length of arm.
Equipment Used: Measuring tape.


c) Measurement of leg length
Purpose: To measure the total length of leg.
Equipment Used: Measuring tape.


d) Measurement of thigh circumference
Purpose: To measure the thigh circumference.
Equipment Used: Measuring tape.


e) Measurement of Biceps circumference
Purpose: To measure the Biceps circumference.
Equipment Used: Measuring tape.


Results and Discussions
The analysis of data and interpretation is done based on the statistical results and findings. Further the results are discussed as per the following steps,

1. Analysis of differences on selected anthropometric measurements among ACR, CAE, ACB, ACK and PGS players:

a) The comparisons (paired t-test) on Biceps circumference among ACR, CAE, ACB, ACK and PGS players:

Table 1: Paired t-test on Biceps circumference among ACR, CAE, ACB, ACK and PGS players

Paired Samples Statistics (Biceps circumference)						
Pairs	**College**	**Mean (in cms)**	**N**	**Std. Deviation**	**t-value**	**p-value**
Pair 1	ACR	12.52	60	3.97	0.36	.741
	CAE	12.13	60	4.62		
Pair 2	ACR	12.52	60	3.97	0.34	.731
	ACB	12.25	60	3.37		
Pair 3	ACR	12.52	60	3.97	0.47	.634
	ACK	12.22	60	4.40		
Pair 4	ACR	12.52	60	3.97	0.54	.605
	PGS	12.70	60	2.97		
Pair 5	CAE	12.13	60	4.62	0.56	.586
	ACB	12.25	60	3.37		
Pair 6	CAE	12.13	60	4.62	1.06	.306
	ACK	12.25	60	4.40		
Pair 7	CAE	12.13	60	4.62	0.14	.887
	PGS	12.70	60	2.97		
Pair 8	ACB	12.25	60	3.37	0.19	.867
	ACK	12.25	60	4.40		
Pair 9	ACB	12.25	60	3.37	0.93	.362
	PGS	12.70	60	3.97		
Pair 10	ACK	12.25	60	4.62	1.02	.294
	PGS	12.70	60	3.97		

*Significant at 0.05 level

Table No. 1 shows the mean, standard deviation and t-value scores of biceps circumference among ACR, CAE, ACB, ACK and PGS players. According to the table it is observed that the mean scores of ACR (12.52), CAE (12.13), ACK (12.25), PGS (12.70) and ACB (12.25) players are similar. The t-values (0.36, 0.34, 0.47, 0.54, 0.56, 1.06, 0.14, 0.19, 0.93 and 1.02) are not significant as p-values (.741, .731, .634, .605, .586, .306, .887, .867, .362 and .297) are more than 0.05 level.

In other words there are no significant differences in biceps circumferences among ACR, CAE, ACB, ACK and PGS players.

b) The comparisons (paired t-test) on Arm length among ACR, CAE, ACB, ACK and PGS players

Table 2: Paired t-test on Arm length among ACR, CAE, ACB, ACK and PGS players

Paired Samples Statistics (Arm length)						
Pairs	**College**	**Mean** (in cms)	**N**	**Std. Deviation**	**t-value**	**p-value**
Pair 1	ACR	77.42	60	8.68	2.45*	.018
	CAE	75.12	60	7.36		
Pair 2	ACR	77.42	60	8.68	1.31	.220
	ACB	76.24	60	9.25		
Pair 3	ACR	77.42	60	8.68	0.23	.834
	ACK	76.41	60	9.10		
Pair 4	ACR	77.42	60	8.68	1.16	.302
	PGS	75.66	60	7.90		
Pair 5	CAE	75.12	60	7.36	0.34	.759
	ACB	76.24	60	9.25		
Pair 6	CAE	75.12	60	7.36	2.28*	.045
	ACK	76.41	60	9.10		
Pair 7	CAE	75.12	60	7.36	0.48	.631
	PGS	75.66	60	7.90		
Pair 8	ACB	76.24	60	9.25	1.07	.286
	ACK	76.41	60	9.10		
Pair 9	ACB	76.24	60	9.25	0.13	.916
	PGS	75.66	60	7.90		
Pair 10	ACK	76.41	60	9.10	1.01	.332
	PGS	75.66	60	7.90		

*Significant at 0.05 level

Table No. 2 shows the mean, standard deviation and t-value scores of arm length among ACR, CAE, ACB, ACK and PGS players. According to the table it is observed that the mean scores of ACR (77.42), CAE (75.12), and ACK (76.41) players are not similar. The t-values (2.45 and 2.28) are significant as p-values (.018 and .045) are less than 0.05 level. In other words there is a significant difference in arm length between ACR & CAE, CAE & ACK players.

Similarly, it is also observed that the mean scores of ACR (77.42), ACB (76.24), CAE (75.12), ACK (76.41), PGS (75.66) and ACB (76.24) players are similar.

The t-values (1.31, 0.23, 1.16, 0.34, 0.12, 0.17, 0.91 and 1.05) are not significant as p-values (.220, .834, .302, .759, .631, .286, .916 and .332) are more than 0.05 level. In other words there are no significant differences in arm length among ACR & ACB, ACR & ACK, ACR & PGS, CAE & ACB, CAE & PGS, ACB & ACK, ACB & PGS and ACK & PGS players.

c) The comparisons (paired t-test) on Leg length among ACR, CAE, ACB, ACK and PGS players

Table 3: Paired t-test on Leg length among ACR, CAE, ACB, ACK and PGS players

Paired Samples Statistics (Leg length)						
Pairs	**College**	**Mean** (in cms)	**N**	**Std. Deviation**	**t-value**	**p-value**
Pair 1	ACR	87.82	60	3.10	2.13*	.042
	CAE	93.02	60	3.79		
Pair 2	ACR	87.82	60	3.10	4.02*	.001
	ACB	95.63	60	6.27		
Pair 3	ACR	87.82	60	3.10	3.24*	.002
	ACK	95.28	60	4.19		
Pair 4	ACR	87.82	60	3.10	4.12*	.001
	PGS	96.82	60	4.71		
Pair 5	CAE	93.02	60	3.79	3.63*	.001
	ACB	95.63	60	6.27		
Pair 6	CAE	93.02	60	3.79	4.72*	.000
	ACK	95.28	60	4.19		
Pair 7	CAE	93.02	60	3.79	5.47*	.000
	PGS	96.82	60	4.71		
Pair 8	ACB	95.63	60	6.27	0.62	.583

	ACK	95.28	60	4.19		
Pair 9	ACB	95.63	60	6.27	0.71	.521
	PGS	96.82	60	4.71		
Pair 10	ACK	95.28	60	4.19	1.52	.147
	PGS	96.82	60	4.71		

*Significant at 0.05 level

Table No. 3 shows the mean, standard deviation and t-value scores of leg length among ACR, CAE, ACB, ACK and PGS players. According to the table it is observed that the mean scores of ACR (87.82), CAE (93.02), ACB (95.63), ACK (95.28) and PGS (96.82) players are not similar. The t-values (2.13, 4.02, 3.24, 4.12, 3.63, 4.72 and 5.47) are significant as p-values (.042, .001, .002, .001, .001, .000 and .000) are less than 0.05 level. In other words there is a significant difference in speed among ACR & CAE, ACR & ACB, ACR & ACK, ACR & PGS, CAE & ACB, CAE & ACK and CAE & PGS players.

Similarly, it is also observed that the mean scores of ACB (95.63), ACK (95.28) and PGS (96.82) players are similar. The t-values (0.62, 0.71 and 1.52) are not significant as p-values (.583, 0.71 and 1.52) are more than 0.05 level.

In other words there is no significant difference in speed among ACB & ACK, ACB & PGS and ACK & PGS players.

d) The comparisons (paired t-test) on Thigh circumference among ACR, CAE, ACB, ACK and PGS players

Table 4: Paired t-test on Thigh circumference among ACR, CAE, ACB, ACK and PGS players

Paired Samples Statistics (Thigh circumference)						
Pairs	**College**	**Mean** (in cms)	**N**	**Std. Deviation**	**t-value**	**p-value**
Pair 1	ACR	55.93	60	2.96	2.06*	.045
	CAE	54.67	60	3.24		
Pair 2	ACR	55.93	60	2.96	2.89*	.012
	ACB	54.00	60	2.54		
Pair 3	ACR	55.93	60	2.96	3.02*	.002
	ACK	54.26	60	2.74		
Pair 4	ACR	55.93	60	2.96	0.81	.821
	PGS	55.74	60	2.86		
Pair 5	CAE	54.67	60	3.24	0.69	.731
	ACB	54.00	60	2.54		
Pair 6	CAE	54.67	60	3.24	0.78	.814
	ACK	54.26	60	2.74		
Pair 7	CAE	54.67	60	3.24	2.42*	.000
	PGS	55.74	60	2.86		
Pair 8	ACB	54.00	60	2.54	0.62	.583
	ACK	54.26	60	2.74		
Pair 9	ACB	54.00	60	2.54	2.81*	.021
	PGS	55.74	60	2.86		
Pair 10	ACK	54.26	60	2.74	2.26*	.032
	PGS	55.74	60	2.86		

*Significant at 0.05 level

Table No. 4 shows the mean, standard deviation and t-value scores of thigh circumference among ACR, CAE, ACB, ACK and PGS players. According to the table it is observed that the mean scores of ACR (55.93), CAE (54.67), ACB (54.00), ACK (54.26) and PGS (55.74) players are not similar. The t-values (2.06, 2.89, 3.02, 2.42, 2.81 and 2.26) are significant as p-values (.045, .012, .002, .000, .021 and .032) are less than 0.05 level. In other words there is a significant difference in thigh circumference among ACR & CAE, ACR & ACB, ACR & ACK and CAE & PGS, ACB & PGS and ACK & PGS players.

Similarly, it is also observed that the mean scores of ACR (55.93), PGS (55.74), ACK (54.26) and ACB (54.00) players are similar. The t-values (0.81, 0.69, 0.78 and 0.62) are not significant as p-values (.821, 0.731, .814 and .583) are more than 0.05 level. In other words there is no significant difference in thigh circumference among ACR & PGS, CAE & ACB, CAE & ACK and ACB & ACK players.

Conclusions and recommendations

Conclusions

- The results shown that there are no significant differences in biceps circumferences among ACR, CAE, ACB, ACK and PGS players.
- According to the findings there is a significant difference in arm length between ACR & CAE, CAE & ACK players.
- It is concluded that there are no significant differences in arm length among ACR & ACB, ACR & ACK, ACR & PGS, CAE & ACB, CAE & PGS, ACB & ACK, ACB & PGS and ACK & PGS players.
- The results show that there is a significant difference in speed among ACR & CAE, ACR & ACB, ACR & ACK, ACR & PGS, CAE & ACB, CAE & ACK and CAE & PGS players.
- There is no significant difference in speed among ACB & ACK, ACB & PGS and ACK & PGS players.
- Findings explores that there is a significant difference in thigh circumference among ACR & CAE, ACR & ACB, ACR & ACK and CAE & PGS, ACB & PGS and ACK & PGS players.
- There is no significant difference in thigh circumference among ACR & PGS, CAE & ACB, CAE & ACK and ACB & ACK players.

Recommendations

- Based on the findings it is recommended that core muscle strengthening exercises, Plyometric exercises, circuit training and interval training are to be performed by the all the campus players of UAS, Raichur regularly for 45-60 days prior to the inter-collegiate matches to prepare and develop their body fitness level adequately which is pre-requisite.
- It is recommended to keep the record of anthropometrical, physical fitness and physiological parameters measurement data of each and every player of UAS, Raichur and it is pre-requisite and it helps scientifically in selecting the player to particular sports and game based on their body type.
- It is also recommended that the duration of tainting and coaching period for practice of UAS, Raichur Sports Contingent should be minimum of 30-40 days for adequate and optimum preparation to perform and achieve excellence in sports and games competitions at all India level.

References

1. Anilkumar. Comparison status of strength and speed between Kho-Kho and Kabaddi male players,

International Journal of Multidisciplinary Research and Development 2014;1(7):63-66.
2. Celal Taskiran. Comparison of the Physical and Physiological Capacities of Elite Turkish Wrestlers and the Wrestlers of the U.S. National Wrestling Team, International Journal of Wrestling Science 2014;4(2):11-14.
3. Praveen Kumar Mishra, Dr. Gursewak Singh Saggu. A Comparative study of Differentiation Ability among District, State and National level of Track and Field Athletes, International Journal of Physical Education and Sports 2017;2(3):17-20.
4. Sanesh Kumari, Navin Kumar. A comparative study of physical fitness components between Kho-Kho and Kabaddi girls players of Haryana, International Journal of Physical Education, Sports and Health 2015;2(2):242-244.