

## COMPARATIVE STUDY OF SELECTED SOMATOTYPE AND ANTHROPOMETRIC VARIABLES OF ACTIVE AND SEDENTARY FEMALES OF PUNJABI UNIVERSITY, PATIALA

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### ABSTRACT

*The purpose of the study was to compare the somatotype and anthropometric variables of active and sedentary females of Punjabi University, Patiala. Total 80 (40 active and 40 sedentary) female age ranging between 17-25 years were selected as subjects. After the collection of the relevant data, it was processed and analyzed with descriptive statistics. To compare the somatotype and anthropometric variables of the subjects, mean, standard deviation and t-test were employed with the help of statistical package of SPSS. To test the hypothesis the significance level was set at .05 percent. After statistical treatment, result showed that there was significant difference between active and sedentary females in anthropometric variable of height, weight and calf skinfold. On the other hand there was no significant difference between active and sedentary females in anthropometric variable of humerus bicondylar.*

*Keywords: Anthropometric, Somatotype and Females.*

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### INTRODUCTION:

Anthropometry is that branch of anthropology that is concerned with the taking measurement on the human body. Anthropometrical method used independently in analysis of the players body builds. These methods also are useful in relating body structure to both physiological functions. Anthropometrical is a comparatively young science and as the technique of measurements is improved; it will be used in an ever increasing number of research studies.

The selection of sports talent on the basis of anthropometrical variables will help the utilizing of time and energy of the coaches in a more effective manner. It is also useful in improving the methods of training for all sports persons and give a new look to the system. The world of games and sports has crossed many milestones, as results of different achievements in general

and their application in the field of sports , in particular .Scientific investigation in field of anthropometry for development of performance of sportsmen has been playing an increasingly important role of anthropometry in the training of athletes , in the scientific way, to attain excellence in performance , in different spheres of sports. Various anthropometrical research conducted by experts , in field of physical education and sports , have emphasized the importance of investigating the specific structures correlated with various sports activities for the selection and development of talent in sports for better performance at different levels of sports competitions.

Palao JM. (2008) find out the height , Body Mass Index (BMI), and age of peak performance beach volleyball players with regard to their level of play and their role .The men,s and women,s pairs that classified in the World Tour and in the Olympic Games during seasons 2000-2006 were analyzed (625 males and 617 females). A descriptive , co relational , and longitudinal design was used. The variables studied were :height , weight, age ,BMI, level and player role . The data were obtained from the webpage of the International Federation of Volleyball. Results showed that average characteristics for males were 1.93m ,88-89 kg, a BMI of 23.8-24.1, and an age range of 29-31 years and for females , they were 1.77-1.79m, 66-68 kg ,a BMI of 19.2 -21.1, and an age range of 27-29 years.

Kawashima et al. (2003) studied 63 male golfers in Japan for body size and somatotype .It was found that within the Japanese golfers group, the mean somatotype of professional golfers (3.8-5.8-1.6), collegiate golfers (4.7-5.6-2.2), general amateur golfers (3.3-4.4-2.6) and collegiate recreational golfers (3.7-4.8-2.7) were endomorphic mesomorph. Control group (4.7-5.6—2.2) was mesomorphic endomorph and non- golfing college student (3.8-4.3-3.3)was central ,respectively.It has been also found that body mass , calf skinfold ,calf circumference, and femur width were some of the anthropometric variables that best discriminated between skilled and unskilled golfers.

## MATERIAL & METHODS :

Subjects: Total eighty female students between age group of 17- 25 years were selected as subjects from Punjabi University, Patiala. Further the subjects were divided into two groups namely active females group and sedentary females group.

### Selection of Variables:

The following four anthropometric variables were selected for the purpose of this research.

- a) Height
- b) Weight
- c) upper arm circumference
- d) calf skin fold

In the present study researcher had used the following instruments.

1. Weighing Machine
2. Anthropometer Rod / compass
3. Skinfold Calliper
4. Sliding Calliper
5. Gullick Tape

### Statistical Procedure

After the collection of relevant data, to compare the selected anthropometric and somatotype variables between active and sedentary females of Punjabi University, Patiala. t-test was employed on mean values of pre and post tests with the help of Statistical Package for the Social Sciences (SPSS) 16.0. The level of significance was set at 0.05 percent.

## ANALYSIS OF DATA AND RESULTS:

Table no. 1: Comparison of Mean and SD for anthropometric variable of height of active and sedentary females of Punjabi University, Patiala.

COMPONENTS	GROUP	MEAN	SD	t- value
Height	Active Females	160.07	6.24	4.92*
	Sedentary Females	150.37	10.77	

$t_{.05}(78) = 1.99$

Table no. 1 shows the Mean, SD and t – value for height of active and sedentary females of Punjabi University, Patiala. The table statistically reveals that the calculated t – value of height 4.92 was greater than table value 1.99. Hence it proves that there was significant difference between active and sedentary females in anthropometric variable of height.

Table no. 2: Comparison of anthropometric variable of weight between active and sedentary females of Punjabi University, Patiala.

COMPONENTS	GROUP	MEAN	SD	t- value
Weight	Active Females	55.6	9.71	2.96*
	Sedentary Females	63.1	12.7	

$t_{.05}(78) = 1.99$

Table no. 2 shows the Mean, SD and t – value for weight of Active and Sedentary females of Punjabi University, Patiala. The table statistically reveals that the calculated t – value of weight 2.96 was greater than table value 1.99. Hence it proves that there was significant difference between Active and Sedentary females in anthropometric variable of weight.

Table no. 3: Comparison of anthropometric variable of humerus bicondylar between active and sedentary females of Punjabi University, Patiala.

COMPONENTS	GROUP	MEAN	SD	t- value
Humerus bicondylar	Active Females	6.12	0.38	1.06
	Sedentary Females	5.96	0.85	

$t_{.05}(78) = 1.99$

Table no. 3 shows the Mean, SD and t – value for humerus bicondylar of active and sedentary females of Punjabi University, Patiala.. The table statistically reveals that the calculated t – value of humerus bicondylar 1.06 is less than table value 1.99. Hence it proves that

there was no significant difference between active and sedentary females in anthropometric variable of humerus bicondylar.

Table no. 4: Comparison of anthropometric variable of calf skinfold between active and sedentary females of Punjabi University, Patiala.

COMPONENTS	GROUP	MEAN	SD	t- value
Calf skinfold	Active Females	12.70	3.57	4.99*
	Sedentary Females	17.13	4.32	

$t_{.05}(78) = 1.99$

Table no. 4 shows the Mean, SD and t – value for calf skinfold of Active and Sedentary females of Punjabi University, Patiala. The table statistically reveals that the calculated t – value of calf skinfold 4.99 is greater than table value 1.99. Hence it proves that there was significant difference between active and sedentary females in anthropometric variable of calf skinfold.

#### DISCUSSION AND CONCLUSION:

Based on the statistical analysis of data following findings were drawn by the researcher:

1. The result of the study revealed that there was significant difference between the measurement of height of active and sedentary females of Punjabi University, Patiala.
2. The result of the study shows that there was significant difference between the measurement of weight of active and sedentary females of Punjabi University, Patiala.
3. The result of the study depicts that there was no significant difference between the measurement of humerus bicondylar of active and sedentary females of Punjabi University, Patiala.
4. The result of the study revealed that there was significant difference between the measurement of calf skin fold of active and sedentary females of Punjabi University, Patiala.

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