



ANALYSIS OF PERCENT BODY FAT OF DIFFERENT SPORTS AND GAMES IN UNIVERSITY PLAYERS

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ABSTRACT :

The purpose of the study was to analysis of percent body fat of different sports and games in university level players. To achieve the purpose of the study, one hundred and twenty men players were selected as subjects. The age, height and weight of the subjects ranged from 17 to 25 years, 162 to 175 centimetres and 56 to 70 kilograms respectively. The selected subjects were randomly assigned into four equal groups of 30 subjects each. Group I taken from badminton players, group II taken from football players, group III taken from swimmers and group IV taken from Non-sports men. The data collected from the four groups on selected dependent variables were statistically analysed to find out the significant difference if any, by applying the 4 x 3 two-way analysis of covariance (ANCOVA). Since four groups were involved, whenever the obtained 'F' ratio for adjusted post-test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. Result of the study showing that significant difference exists among the sports wise players and also the diet wise on percent body fat.



KEYWORDS : Percent body fat, Sports and Diet.

INTRODUCTION

Bone mineral is dynamic in living animals; it is continually being resorted and built anew in the bone remodeling process. In fact, the bones function as a bank or storehouse in which calcium can be continually withdrawn for use or deposited for storage, as dictated by homeostasis, which maintains the concentration of calcium ions in the blood serum within a particular range despite the variability of muscle tissue metabolism. Parathormone and calcitonin are the principal hormones with which the neuroendocrine system controls this ongoing process. The parathyroid and thyroid glands in the neck produce those hormones; thus, problems with those glands (such as hypo- or hyperparathyroidism or hypo- or hyperthyroidism) can create problems with bone mineral density. The bone cells develop new bone tissue and continual bone remodeling – maintaining the bones and the regulation of minerals in the body (Hall, 2011). Types of bone cell include osteoclasts, which break down bone tissue; osteoblasts, which build new bone tissue; osteocytes, which hold the bone together; and lining cells, which protect the bone.

METHODOLOGY

The purpose of the study was to analysis of percent body fat of different sports and games in university level players. To achieve the purpose of the study, one hundred and twenty men players were selected as subjects. The age, height and weight of the subjects ranged from 17 to 25 years, 162 to

175 centimetres and 56 to 70 kilograms respectively. The selected subjects were randomly assigned into four equal groups of 30 subjects each. Group I taken from badminton players, group II taken from football players, group III taken from swimmers and group IV taken from Non-sports men. The comparative design in this study was random group design involving 120 subjects, who were divided at random in to four group of thirty each. All the four groups selected from the different sports and games players. Percent body fat was measured by skin fold calibre. The data collected from the four groups on selected dependent variables were statistically analysed to find out the significant difference if any, by applying the 4 x 3 two-way analysis of covariance (ANCOVA). Since four groups were involved, whenever the obtained 'F' ratio for adjusted post-test means was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences. In all the cases level of confidence was fixed at 0.05 for significance.

RESULTS

Descriptive analysis of the data on percent body fat of different sports players and diet followers are presented in table -I .

Table-I

		N	Badminton	Soccer	Swimmer	Non-sports men
Vegetarian	Mean	10	16.66	16.33	15.22	22.27
	SD		0.15	0.24	0.10	0.15
Semi-vegetarian	Mean	10	17.59	17.22	16.63	23.32
	SD		0.17	0.10	0.30	0.16
Non-vegetarian	Mean	10	18.46	18.10	17.08	23.79
	SD		0.15	0.47	0.16	0.09
Total	Mean	30	17.57	17.21	16.31	23.12
	SD		0.76	0.79	0.83	0.66

Presented in Table - I the means and standard deviations on percent body fat of badminton players, soccer, swimmer and non-sports men are 16.66 ± 0.15 , 16.33 ± 0.24 , 15.22 ± 0.10 and 22.27 ± 0.15 respectively belongs to vegetarian.

The means and standard deviations on percent body fat of badminton players, soccer, swimmer and non-sports men are 17.59 ± 0.17 , 17.22 ± 0.10 , 16.63 ± 0.30 and 23.32 ± 0.16 respectively belongs to semi-vegetarian.

The means and standard deviations on percent body fat of badminton players, soccer, swimmer and non-sports men are 18.46 ± 0.15 , 18.10 ± 0.47 , 17.08 ± 0.16 and 23.79 ± 0.09 respectively belongs to non-vegetarian.

The total mean and standard deviations cumulative values of vegetarian, semi-vegetarian and non-vegetarian on percent body fat of badminton players, soccer, swimmer and non-sports men are 17.57 ± 0.76 , 17.21 ± 0.79 , 16.31 ± 0.83 and 23.12 ± 0.66 respectively.

Table - II
4 x 3 TWO-WAY ANALYSIS OF VARIANCE ON PERCENT BODY FAT AMONG DIFFERENT SPORTS PLAYERS AND DIET FOLLOWERS

Source of Variance	Sum of Squares	df	Mean Squares	Obtained "F" ratio	Sig.
Model	923.86	11	83.98	1774.03	.000
Sports	861.04	3	287.01	6062.51	.000
Diet	61.45	2	30.72	649.07	.000
Sports X Diet	1.35	6	0.22	4.78	.000
Error	5.11	108	0.047		
Total	928.97	119			

(Table values required for significance at 0.05 levels with df 3 and 108 is 2.70)

Table - II stated that the obtained 'F' ratio value of sports, diet and sports x diet are 6062.51, 649.07 and 4.78 which are higher than the required table value of 2.70 with df 3 and 108, 2 and 108 6 and 108 for the significance at 0.05 level of confidence. This value showed that significant difference exists among the different sports players and their diet practices on percent body fat.

Table - III
Scheffe's Pair Wise Comparison for the different sports players

(I) Sports	(J) Sports	Mean Difference (I-J)	Std. Error	Sig.
Badminton players	Soccer	.353	.056	.000
	Swimmer	1.260	.056	.000
	Non-sports men	-5.556	.056	.000
Soccer	Swimmer	.906	.056	.000
	Non-sports men	-5.910	.056	.000
Swimmer	Non-sports men	-6.816	.056	.000

Based on estimated marginal means

* The mean difference is significant at the 0.05 level.

The results indicated that the mean difference between the badminton players and soccer, badminton players and swimmer, badminton players and non-sports men, soccer and swimmer, soccer and non-sports men, swimmer and non-sports men are .353, 1.260, -5.556, .906, -5.910 and -6.816 respectively. The results indicated that the mean difference between the badminton players and soccer, badminton players and swimmer, badminton players and non-sports men, soccer and swimmer, soccer and non-sports men, swimmer and non-sports are significant at .05 level on percent body fat.

Table -IV
Scheffe's Pair Wise Comparison for the different diet followers

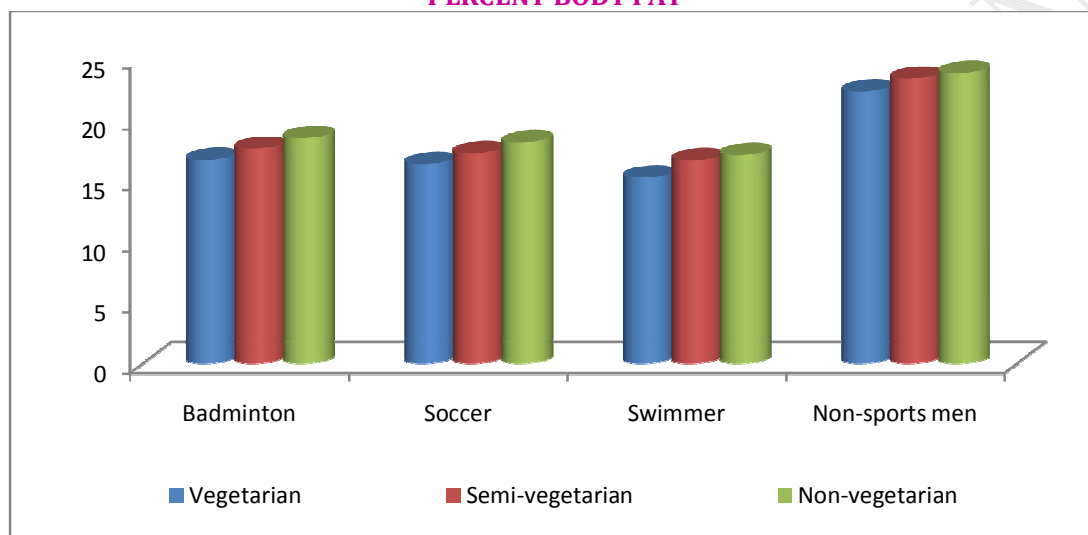
(I) Diet	(J) Diet	Mean Difference (I-J)	Std Error	Sig.
Vegetarian	Semi-vegetarian	-1.070	.048	.000
	Non-vegetarian	-1.737	.048	.000
Semi-vegetarian	Non-vegetarian	-.667	.048	.000

Based on estimated marginal means

* The mean difference is significant at the 0.05 level.

The results indicated that the mean difference between the vegetarian and semi-vegetarian, vegetarian and non-vegetarian, semi-vegetarian and non-vegetarian are -1.070, -1.737 and -.667 respectively. The results indicated that the mean difference between the vegetarian and semi-vegetarian, vegetarian and non-vegetarian, semi-vegetarian and non-vegetarian are significant at .05 level on percent body fat.

Figure - I
CYLINDER DIAGRAM SHOWS THE MEAN VALUE OF
DIFFERENT SPORTS AND DIET FOLLOWERS ON
PERCENT BODY FAT



DISCUSSION AND FINDINGS

In the present study seeing on the sports (game), wise result showed that significant difference exists between the badminton players and soccer, badminton players and swimmer, badminton players and non-sports men, soccer and swimmer, soccer and non-sports men, swimmer and non-sports on percent body fat. Also the present study seeing on the diet follower's wise result showed that significant difference exists between vegetarian and semi-vegetarian, vegetarian and non-vegetarian, semi-vegetarian and non-vegetarian on percent body fat. The following studies are supporting our research findings. Bradbury, *et al.*, (2017) examined if, in the general population, physically active adults have less body fat into account. Study result stated that body fat percentage were highly correlated ($r=0.85$ in women; $r=0.79$ in men), and both were inversely associated with physical activity when compared with general population. Liliana, *et al.*, (2015) investigated the anthropometrical status of athletes and non-athletes. They demonstrated the existence of differences between the non-athletes and athletes of their body fat. Sasa and others (2013) determined the body mass index (BMI), body fat and skeletal muscle mass levels and differences in the high school population of athletes and non-athletes of both genders. The results pointed out that athletes, compared to non-athletes, i.e., males compared to females, do have better body composition statistically significant differences were determined.

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