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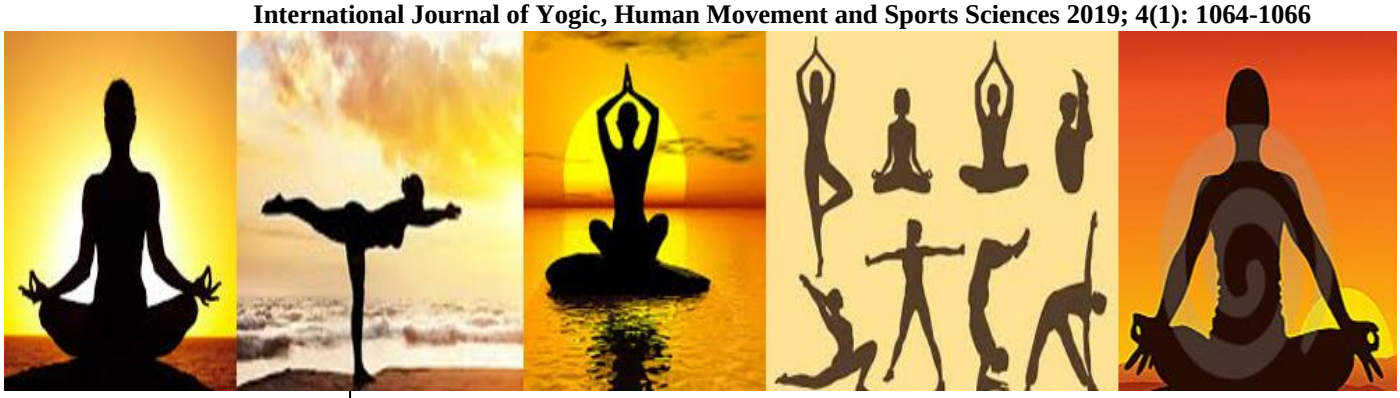

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Comparative analysis of body fat among college level footballers from different parts of India

Dr. E Saravanan

Abstract
The Excess body fat hinders the sport performance. Granted, outstanding sports men and women come in all shapes and sizes even within the same sport. But remember, it's not our weight that matters but the body fat percentage. The purpose of the study was to analyze and compare the body fat of football players from different parts of the country studying in CMS College of Science and Commerce, Coimbatore. The twenty subjects (football players) each from Coimbatore, Ooty, Kerala and from other states (n = 20) selected from CMS College. The percentage of body fat was selected as a criterion variable for the study. The skin fold measurements were taken in the morning times before their practicing sessions. Body fat percentage was calculated using the norms provided by WHO. The collected data was interpreted with one-way ANOVA to find out the difference among the various categories of football players. From the results of the study it was inferred that, the other states football players of CMS College having lesser percent body fat than other category of football players from Coimbatore, Ooty and Kerala of CMS College.

Keywords: Body fat among, college level footballers

Introduction
Percent body fat has important implications for both health and athletic performance. Excess body fat has been associated with chronic disease including coronary heart disease, hypertension, high cholesterol and some cancers (Hubert H.B *et al*, 1983) [1].
Body fat includes lipids from adipose and other body tissues. No doubt about that the Excess body fat hinders sport performance. Granted, outstanding sports men and women come in all shapes and sizes even within the same sport. But remember, it's not our weight that matters but the body fat percentage. Some of the reasons are the excess body fat is related to injury, non adherence to training and overall reduced athletic performance. A high body fat percentage acts as "dead weight" reducing speed and efficiency of movement. (Vardar *et al*, 2007) [2]. In addition, competitive and recreational athletes are interested in monitoring their body composition since body fat beyond what is needed for optimal functioning may impair performance, particularly in activities that require running or jumping (Wilmore, J.H, 1983). A high body fat percentage is also detrimental to jumping, agility and endurance activities. Even those athletes who want to gain weight will harm their performance by increasing body fat too much. A certain amount of body fat is vital for the body to function normally and healthy. In fact, striving for a body fat percentage that is too low can be dangerous.
This consists mainly of fat deposited just under the skin or subcutaneous fat. Storage fat for men and women is fairly similar. For the average man 12% of body weight is storage fat and for the average female 15% of body weight is storage fat. For the body to function typically and healthily a certain amount of body fats is required. This is known as indispensable fat. For female the common quantity of imperative fat is 12% of body weight and for men it is 3%. Trying to attain a physique fat proportion that is so low it influences your vital fats shops is no longer proper for the health. Some storage fats is additionally required for properly health. It's used to shield internal organs in the chest and abdomen. So, consider that the goal to continue to be inside the vary for age and gender and relaxation guaranteed we are taking one of the most tremendous steps to life-long fitness we can.

In general, it preferable for soccer players to devour high-carbohydrate, low fat foods. They must be informed of the health risks of fats in their food regimen and to be cautious of what their meals contains, specifically for players in certain sports are struggling from weight problems. It is also really worth bringing up the significance of reducing fat intake when out of season or injured. It may additionally be beneficial for coaches to measure body fat (estimated the usage of pores and skin calipers) for comparisons in the course of the year.

The main objective of the study was to find out the body fat level among Coimbatore, Ooty, Kerala and Other states football players from CMS College of Science and commerce. Further, to find out the real difference among Coimbatore, Ooty, Kerala and Other states football players from CMS College of Science and commerce.

The purpose of the study was to analyze and compare the body fat of different category of football players in CMS College of Science and Commerce. It was hypnotized that there may be a different among the various category football players of Coimbatore, Ooty, Kerala and Other states football players in CMS College.

Material and Method

The subjects were 80 football players and each 20 players from Coimbatore, Ooty, Kerala and other states students (players) studying in CMS College of Science and Commerce, Coimbatore were selected randomly for this study. Their ages ranged from 17 - 23 years. The percentage of body fat was selected as variable for this study. All the players were oriented the purpose of the study. The skin fold measurements were taken in the morning times before their practicing sessions. Body fat percentage was calculated using the norms provided by WHO. The skin fold measurements were taken in the morning times before their practicing sessions. The skin fold was grasped firmly by the thumb and forefinger; the caliper was applied to the skin fold, and after two seconds the caliper dial was read; the reading was recorded in mm; this procedure was repeated three times. Body fat percentage was calculated using the above norms. The body fat percentages were then used for data analysis.

Collection of Data and Statistical Technique Used

The collected data was interpreted with one-way ANOVA to find out the difference among the various categories of football players. In analyzing the analysis of variance, the F – ratio needed was 2.08 at P < 0.05 level of confidence for degrees of freedom 3 and 116. The statistical analyses were performed using Statistical Package for Social Sciences (SPSS) for Windows (version 16.0).

Analysis of Data and Results of the Study

TABLE 1: Analysis of Variance on Percent Body Fat among Coimbatore, Ooty, Kerala and Other States Football Players

Mean ± SD				Source	Sum of square	df	Mean square	F – ratio
Cbe	**Ooty**	**Kerala**	Other **states**					
18.40 ± 40	16.00 ± 1.33	15.34 ± 1.18	14.61 ± 1.27	BG	241.86	3	80.62	43.88*
				WG	213.14	116	1.84	

* - Significant at 0.05 level Table value – 2.68

Table - 1 reveals the computation of 'F" ratio on percent body fat means of Coimbatore, Ooty, Kerala and other states football players. The obtained F ratio of percent body fat means on percent body fat was 43.88. Since the F – value was higher than the required table value of 2.68 for the degrees of freedom 3 and 116, it was significant at 0.05 level of confidence. Whenever the F value among the football players on percent body fat was found to be significant, in order to find out which category of football players had higher value of percent body fat than the Scheffe's post hoc test was applied.

Table 2: Scheff's Test for the Differences between the Means on Percent Body Fat

Coimbatore	Ooty	Kerala	Other **states**	Mean Difference
18.40	16.00	--	--	2.40*
18.40	--	15.34	--	3.06*
18.40	--	--	14.61	3.79*
--	16.00	15.34	--	0.66
--	16.00	--	14.61	1.39*
--	--	15.34	14.61	0.73

*Significant at 0.05 level Confidence interval (CI): 1.14

Table 2 reveals that the mean differences between the paired means of various categories of football players on percent body fat.

The mean difference between Coimbatore and Ooty, Coimbatore and Kerala, Coimbatore and other states, Ooty and other states were 2.40, 3.06, 3.79 and 1.39 respectively, these values were higher than the required confidence interval value of 1.14, and it was significant. Since the mean differences of percent body fat means of Ooty and Kerala and Kerala and Other states were 0.66 and 0.73 respectively, these values of mean differences were less than the required confidence interval value, and it was found to be not significant.

Graphical representation of mean values of Coimbatore, Ooty, Kerala and Other states football players on percent body fat was presented in diagram - 1.

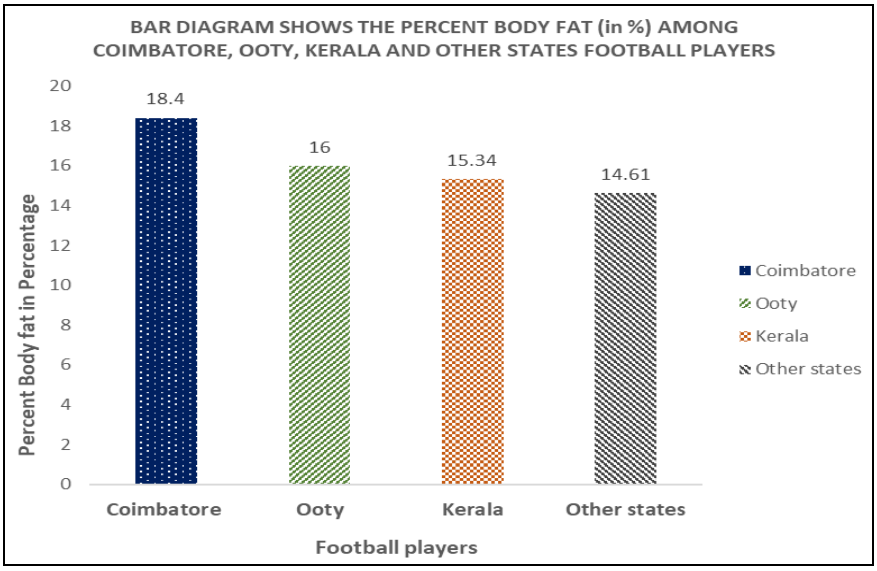

Diagram 1: The Bar Diagram Shows the Percent Body Fat (In %) Among Coimbatore, OOTY, Kerala and Other States Football Players in CMS College Of Science and Commerce, Coimbatore.

Discussion and findings

From the results of the study it was inferred that, the other states football players of CMS College having lesser percent body fat than other category of football players of Coimbatore, Ooty and Kerala football players of CMS College. Further, the Kerala football players of CMS College having lesser percent body fat than Coimbatore and Ooty football players. The Ooty football players of CMS College having lesser percent body fat than Coimbatore football players. The reason for this finding may be because of the other states from all over India are mainly came from the eastern parts of the country like Manipur, Tripura, Assam and west Bengal, hence the early lifestyle and fame of the game of football in their won place influenced in their body composition contents.

According to the current WHO cut-off points do not provide an adequate basis for taking action on risks related to overweight and obesity in many populations in Asia. The north Indians students we were having the less body fat followed the proper diet and exercise in their routine than the Kerela students who are not so care about the routine and used to play harder than others. The Ooty students are having less body mass index with low level of fat in particularly of in their abdominal fat measurement.

The students from Kerala are well known for football as like students from Ooty also their lifestyle and grace on the game of football influenced directly to maintained be a fit body with fatless on this young adolescent age. In the cases of Coimbatore students, the opportunity of playing football conditions are not cope up with their lifestyle and environmental conditions. These reasons were influenced their fitness also related with less fat percentage of these football players.

Conclusions

The football players from other states studying in CMS College had lesser percent body fat than other Indian students from Coimbatore, Ooty and Kerala. Among the students from Kerala state football players having less percent body fat than the Tamilnadu football players from Coimbatore and Ooty. From the results of the study it was clearly concluded that the football players from Ooty studying in CMS College had less percent body fat than the Coimbatore football players studying in CMS College, Coimbatore.

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