



SOMATOTYPE COMPARISON AMONG DIFFERENT SPORTS PLAYER

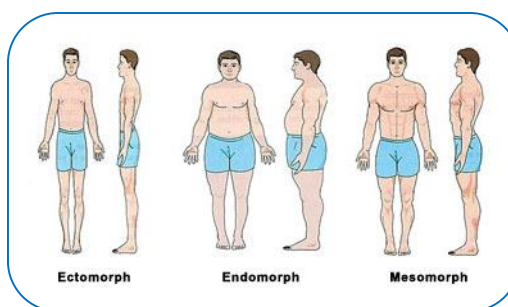
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ABSTRACT :

The aim of this research was to compare the characteristics of the somatotype of different sports groups of male students from the district of Jhansi. The research was restricted to the Heath Carter Anthropometric Somatotype Method evaluation of the somatotype portion. Height, weight, skinfold width at triceps, sub-scapular, supraliac and calf regions or biepicondyl diameter of Humerus, Femur and girth of Biceps and Calf was the anthropometric component used. The instruments used in the study were such as wall scale, weighing machine, skinfold calliper, adjusted sliding calliper, steel tape, etc., and one-way variance analysis (ANOVA) for comparison of somatotype among selected sports groups at 0.05 level of significance. Related sports classes in the Jhansi district were found to be more dominant in the Endomorphy portion than in the mesomorphy and ectomorphy section, according to the study findings.



KEYWORDS : Somatotype, Comparison, Endomorphy, Mesomorphy, Ectomorphy.

INTRODUCTION :

A somatotype is a description of present morphological conformation. It is expressed in a rating, consisting of three sequential numbers, always recorded in the same order. Each number represents evaluation of one of the three primary components of physique which describe individual variations in human morphology and composition. Endomorphy or the first component refers to relative fatness and leanness of the physique, mesomorphy or the second component refers to musculo-skeletal development relative to height and ectomorphy or the third component refers to the relative linearity of the physique. There has been much interest in noting the personality associated with certain type of body. (Carter 1982)

Now withstanding these shortcomings, Heath and Carter² developed a simplified method for somatotyping with the use of selected anthropometric measurements. In addition to its simplicity, this method provides for changes in somatotypes during a person's lifetime. (Sheldon et al 1940)

Using Sheldon's as well as Heath and Carter's method, numerous attempts were made to study the relationship of somatotype to health and physical/motor fitness of individuals. A perusal of the literature would seem to indicate that somatotype on one hand, and health and fitness on the other are inter related and interact to serve as important factors in determining the health and fitness needs as well as the interests and abilities of individuals and may be of use for classification purposes. (Heath et al 1968)

Physical educators have long realized that the performance of boys and girls is greatly influenced by such factors as age, height, weight and body structure. It is also acknowledges that the persons of the same age will vary considerably in body size and shape; that individuals of same height will differ greatly in body weight that person may weigh the same but the relative proportion of the muscle fat and bone will be anything but equal. It is obvious then that no single measure by itself is satisfactory for the purpose of classifying students into homogeneous groups. (Johnson et al 1982)

The aim of the research was to determine the comparison of somatotypes between the sports groups chosen. The research was limited to 50 students from various games, i.e. Hockey, Basketball, Football, Handball, and Cricket players ranged in age from 17-21 years and the research further delineated the measurement by the Heath Carter Anthropometric Somatotype System of somatotype components. It was speculated on the basis of studies, professional opinion and the own interpretation of the scholar that there will be a substantial variation between different sporting classes on somatotypes.

METHODOLOGY

The subjects for the study were 50 male students aged 17-22 years of age from the district of Jhansi. The Heath Carter somatotype approach was chosen to find physical features of male students in the Jhansi district, taking into account the feasibility of time and expense. The data on all somatotype variables, i.e. height, weight, muscle girth and body fat, were obtained from the topics of chosen games. Under the supervision of experts, the Heath Carter Anthropometric-Somatotype instruction and technique is embraced and properly applied. For the study of somatotype similarity data among selected sports groups, one-way variance analysis (ANOVA) was used at a significance level of 0.05.

FINDING

Table 1
MEAN OF SOMATOTYPE CHARACTERISTICS AMONG VARIOUS SPORTS GROUP

S.No.	Somatotype	Handball	Basketball	Volleyball	Football	Cricket
1	Endomorphy	3.2	3.4	4.05	2.55	3.8
2	Mesomorphy	2.9	3.35	4.1	3.3	2.8
3	Ectomorphy	3.4	3.35	2.4	3.1	3.45

Table 1 reveals that the handball district of Jhansi dominates more in ectomorphy (3.4) than mesomorphy (2.9) and endomorphy (3.2). Basketball students have equivalent elements of endomorphy (3.4), mesomorphy (3.35) and ectomorphy (3.35). In the case of volleyball and football, the aspect of mesomorphy (4.1, 3.3) is even more dominant than that of endomorphy (4.05, 2.55) and ectomorphy (2.4, 3.1). The Jhansi District Cricket students dominate more than two other components of Endomorphy (3.8).

Table 2
ANALYSIS OF VARIANCE OF SOMATOTYPE CHARACTERISTIC AMONG VARIOUS SPORTS GROUP

Somatotype	Source of Treatment	Sum of Scores	Df	Mean Square	F
Endomorphy	Between Group	13.450	4	3.363	3.46*
	With Groups	44.550	45	0.990	
	Total	58.000	49		
Mesomorphy	Between Group	2.320	4	0.580	0.564
	With Groups	55.525	45	1.234	
	Total	57.845	49		
Ectomorphy	Between Group	7.570	4	1.893	0.749
	With Groups	97.950	45	2.177	
	Total	105.520	49		

*Significant at 0.05 level

It is obvious from Table 2 that the portion of F- value for Endomorphy is 3.46, which is important with df at 0.05 level (4,45). This means that the mean endomorphic variable scores vary greatly between different classes of sports, i.e. Hockey, basketball, volleyball, cricket and football. Therefore, it can be found out that the mean scores of Volleyball and Cricket's Endomorphy component are better than other game students and there is a larger endomorphy component for volleyball students. Therefore, in Table 3, the LSD post-Hoc comparison of the Endomorphy variable between different sports classes is provided.

Table 3
LSD POST-HOC TEST COMPARISON OF MEANS AMONG VARIOUS SPORTS

Volleyball	Cricket	Handball	Basketball	Football	Mean Difference	C.D.
4.05	3.80				0.35	0.741
4.05		3.20			0.95*	
4.05			3.40		0.55	
4.05				2.55	1.5*	
	3.80	3.20			0.6	
	3.80		3.40		0.4	
	3.80			2.55	1.25*	
		3.20	3.40		-0.2	
		3.20		2.55	0.55	
			3.40	2.55	0.95*	

* Significant $CD_{0.5} = 0.741$

Table 3 indicates that in volleyball-handball, volleyball-football, cricket-football and basketball-football, there was a median gap. The required value is 2.58 or more to be important at the 0.5 standard, while the estimated value is 0.95, 1.5, 1.25 and 0.95. Therefore, the F value measured is higher than the F value tabulated. So, it was apparent that the variable of endomorphy is greater than the variable of mesomorphy and ectomorphy.

CONCLUSION

Based on the statistical analysis of the data it is clearly revealed that F-value 3.46 for Endomorphy component is significant at 0.05 level with df = (4,45). This statistical importance in relation to endomorphy

can be due to the fact that the type of action and role conditions of volleyball and cricket players are entirely different from other sports and that is why they have higher characteristics of endomorphy. However, at 0.05 level with $df = (4,45)$, the F-value for Mesomorphy and Ectomorphy is not important. This may be attributed to the fact that all subjects were player of Jhansi district are undergoing same course content as fast as their physical activity is concern. In addition to one hour of game work, they are interested in different games and activities. Although they are not involved in much advanced level preparation and instruction in professional physical education and sporting activity, their somatotype has limited importance for different sports category characteristics. On the basis of the statistical result, it can be said that the theory previously claimed that in relation to the somatotype, there was a substantial association between different sports categories. On the basis of methodological results, this was found to be partly accepted in the case of the component of Endomorphy and rejected in the case of the component of Mesomorphy & Ectomorphy.

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