

**A Study of Relationship between Body types and Physical fitness variables
among Engineering College Students In Telangana State**

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Abstract:

The purpose of the study will determine the relationship between body types and physical fitness variables among engineering college students in Telangana State. The present study is delimited to subjects chosen from engineering college students of different streams. The physical efficiency test is conducted for the age group ranges from 18 to 21 years. Study is delimited to male students only. The subjects were 90 male students of JNTUH University Sultanpur engineering college. Aged between 18 to 21 years; male students only. A total of 90 students were randomly chosen for the study. (N= 30 Endomorph, N= 30 Mesomorph and N= 30 Ectomorph). The subjects had their regular schedule of training in physical education sports and games as per the programmers of the college. There was no control on the individual practice of sports and games in specific disciplines during their non- college hours. Classifying the individuals on the basis of physical characteristics associated with the body built prescribed by **Sheldon** while presenting his **7 point scale** for the three principle body types. Body types referred as somatic types of the adulthood students in the age group of 18 to 21 years have a strong relationship to the physical fitness. **Keywords:** Body types, Physical fitness, Endomorph, Mesomorph, Ectomorph etc.

Introduction:

Modern physical education should contribute much for the welfare of the children, youth and adults. The processes of the physical education should be changed with the environmental changes in the surroundings. There are many factors which influence growth basically; heredity furnishes the frame of reference. Some characteristic combinations of genes from the parents and make up heredity and place limits upon the individual. Environmental factors which can significantly influence growth and development of a student are: Nutrition, climate, out-door living, fresh air, sun shine, exercise and rest. Both heredity and environment provide for great variations in growth. These variations complicate the job of the education but especially the physical educator. In fact, even within one family we observe many physiques and structural differences.

BodyTypes:

The combination of genes in one family is almost limitless. This great variation in heredity is one of the bases for the principle of individual differences. Thus, variation in heredity is followed by variations in body types and these body types follow a continuous distribution. In general, the youngsters follow a rather definite growth and development. There are several methods of classification for body types. Probably the best known method to the physical educator is the one proposed by Sheldon, patterned somewhat after a method presented by **Kretschmer** a German psychiatrist, where body builds were classified into three categories: Asthenic, Athletic and Pyknic.

W.H. Sheldon an American psychologist also divided people into three types depending upon the tissue and skin composition namely the Ectomorph, Mesomorph and Endomorph. Sheldon had proposed a 7 point scale to categorize all individuals under the above three body types. Physical fitness is composed of many complex factors; complex evaluation cannot be done by testing a single factor. Many variables, such as those included in measuring cardio respiratory and cardio vascular endurance, muscular strength, muscular endurance, neuro-muscular skills, agility, co-ordination, balance, flexibility and nutrition reflects each in a special way, some aspect of total physical fitness

Statement of the Problem:

The purpose of the study will determine the relationship between body types and physical fitness variables among engineering college students in west Telangana.

Hypotheses:

It was hypothesized that there is significant difference on Pull-ups (Arm and Shoulder strength), Sit-ups (Abdominal Strength and Endurance), Shuttle run (Agility), Standing broad jump (Power and Lower explosive strength), 50 yard Dash (Speed), 600 yard Run (Endurance) on different body types among engineering college students in west telangana.

Delimitations:

The present study is delimited to subjects chosen from engineering college students of different streams. The physical efficiency test is conducted for the age group ranges from 18 to 21 years. Study is delimited to male students only.

Limitations:

Environmental conditions among the various students participating in the study. Sociological and economical status of the students. Nutritional status (food consumption) among students. Family case history of the subjects.

Significance of the Study:

Aspiration to excel in higher levels of competitions is a natural urge among sports persons. However, in the presentday's competitive world, one has to be more specific and systematic in pursuing ones goal. To analyze the difference in physical fitness parameters of different body types among engineering students of Telangana State

Methodology:

The subjects were 90 male students of JNTUH University Sultanpur engineering college. Aged between 18 to 21 years; male students only. A total of 90 students were randomly chosen for the study. (N= 30 Endomorph, N= 30 Mesomorph and N= 30 Ectomorph). The subjects had their regular schedule of training in physical education sports and games as per the programmers of the college. There was no control on the individual practice of sports and games in specific disciplines during their non- college hours. Classifying the individuals on the basis of physical characteristics associated with the body built prescribed by **Sheldon** while presenting his **7 point scale** for the three principle body types. Once the subjects were assigned to one of the three body type groups by observation method, they were again subjected to final assessment to confirm their suitability in a particular body posture by taking the above listed structural aspects into consideration. While selecting the subjects for each of the three bodies type groups the following physical characteristics were taken into consideration: Bodily features, structure of the face, structure of the skeletal frame & bone mass, type of the skin, body fat, musculature and structure of the extremities. AAHPER Youth fitness test is incorporated for assessing the physical fitness components among different body type engineering students of telangana.

The Test:

In order to relationship of body types and the physical fitness variables among the subjects selected for the purpose of the present study, the AAHPER Youthfitness test has been conducted.

AAHPER YouthFitnessTest:

AAHPER Youth fitness test has been originally developed in the United States of America with a specific purpose of finding an effective means to measure status and achievements in physical fitness objective. The test items were selected by a team of experts committee.

Originally, the test was conducted upon 90 male students of JNTUH University College of engineering Sultanpur at a certain ranging ages from 18 to 21 years. The test can be conducted in two following sessions.

During the first session, Pull-ups, Standing broad jump and Shuttle run can be conducted. At second session, Sit-ups, 50 yard dash and 600-yard run walk can be preceded. The test if felt to be the most simple and effective means to test the achievements and the physical fitness among the youth. The testis more economical in terms of space and the time aspects.

AnalysisofData:

The statistical analysisof the data (number of Pull-upspformedin one continuouseffort, number of Sit-ups performed in 60 seconds, the distance covered in feet and inches in Standing broad jump, the elapsed time during Shuttle run, 50-yard Dash and 600-yards Run-walk in seconds and tenths ofseconds) on conducting the AAHPER Youthfitness test collected to 30 Endomorph type, 30 Mesomorph type and 30 Ectomorph type of engineering college students of JNTUH University Sultanpur within theage groups of 18 to 21 years.

Statistical Analysis:In the present study random group design will be used. The statistical analysis of variance (ANOVA) through SPSS. The level of significance isfixed at 0.05 levels to test the hypothesis.

Results and Discussion.

The Mean, covariance of scores and ‘F’ values of the investigated Endomorph, Mesomorph and Ectomorph body types in AAHPER Youthfitness test are given in the table No. 1 and 2 and their analysis and interpretation follows them.

TABLE–1:Mean Scores of Endomorph,Mesomorph and Ectomorph BodyTypes inAAHPERYouthFitness Test:

BodyTypeGroup :	MeanScores:
Endomorph	61.3
Mesomorph	154.75
Ectomorph	113.42

**Significantat0.05level.

The mean score of the Mesomorph body type is higher than the other two groups, while the mean scoreof Ectomorph body type is higher than that of Endomorph body type.

TABLE-2:

Analysis of Covariance of Scores of Endomorph, Mesomorph and Ectomorph in AAHPER Youth Fitness Test:

Test Statistics:	Endomorph:	Mesomorph:	Ectomorph:	'F'-value
$\sum x$	3680	9285	6805	73.85**
$\sum x^2$	2,52,875	15,90,475	9,06,125	
$\frac{\sum \sum x^2}{(xn-x-2)}$	2,25,706.6	14,36,853.75	7,71,800.42	
	27,168.3	1,53,621.25	1,34,324.58	

**Significant at 0.05 level of confidence with degrees of freedom between means 2 and degrees of freedom within sample means 177.

Conclusion:

1. Body types referred as somatic type of the adulthood students in the age group of 18 to 21 years have a strong relationship to the physical fitness.
2. 19 years old students are physically less fit compared to the 18 and 21 year old students.

Recommendations:

In the light of the conclusions drawn from this investigation it is recommended that body types shall be given due weight age in the selection of individuals for specific events and also for general training in physical activities and sports, as a strong relation has been found between the body types and physical fitness of the adulthood students in the age group of 18 through 21 years. Further, the following recommendations are also made for further investigations:

- The investigation may be repeated by taking larger samples.
- The investigation may be repeated by adopting other means of testing.
- Similar studies may be made with the subjects belonging to other ages of adulthood that is older students.
- Similar investigations may be undertaken combining the body types with other physical, physiological and psychological variables.

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