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## Comparative study of anthropometric variables and physical fitness components between B.P.L and A.P.L category physical education students

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### Abstract

The purpose of the study was to investigate the difference of general Physical Fitness components and Anthropometric variables between B.P.L and A.P.L level physical education students. In 60 male B.P.Ed students from P.G.G.I.P.E Banipur North 24 pgs, West Bengal were selected as the subjects for this study. The age of the subjects range between 22-25 years. Height, Body Weight, B.M.I for anthropometry and AAHPERD physical fitness components- (Pull Ups, 50 Yards Dash, Shuttle run, Standing Broad Jump, Bent Knee Sit Ups, 600 Yards run and Walk tests) were considered as the variables of the study. Student 't' test was applied to calculate the collected data at 0.05 level of significance. The result showed that there was no significant difference between the two categories of physical education students in Anthropometric variables and significant different in Physical Fitness components belonging A.P.L and B.P.L category.

**Keywords:** Comparative study, anthropometric variables, physical fitness, B.P.L and A.P.L category

### Introduction

Historically, however, it is believed that the caste system began with the arrival of the Aryans in India around 1500 BC (Daniel). Of the many cultures that flourished in India, the literary records of the Indo-Aryan culture are not the earliest. They do, however, contain the first mention and a continuous history of the factors that make up the caste system. The Indian Caste System is historically one of the main dimensions where people in India are socially differentiated through class, religion, region, tribe, gender, language and economical. Although this or other forms of differentiation exist in all human societies, it becomes a problem when one or more of these dimensions overlap each other and become the sole basis of systematic ranking and unequal access to valued resources like wealth, income, power and prestige. After independence in India economical stratification system become the major stratification system. Economic stratification refers to the condition within a society where social classes are separated, or stratified, along economic lines. Various economic strata or levels are clearly manifest. While in any system individual members will have varying degrees of wealth, Economic stratification should not be confused with the related concept, economic inequality. This deals with the range of wealth, rather than the existence of distinct strata. Economic inequality and economic stratification can coincide. According to Indian constitution per-capita income of an BPL individual is not sufficient to maintain his daily requirement calorie. Because the NCP called for amending the poverty in the state in mind the increase in prices of commodities over the last decade. So researcher think that there might have any significant different on anthropometric variables and Physical Fitness on un-sufficient nutrition and income.

### Statement of the problem

The purpose of the study was to compare the differences on selected Anthropometric variables and Physical Fitness level between A.P.L & B.P.L category B.P.Ed students.

### Design

Random group design was used for this study.

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**Delimitation**

- The study was delimited to the male students.
- The study was delimited to the boys within the age ranged between 22 to 25 years.
- The study was delimited to the, B.P.Ed students of P.G.G.I.P.E Banipur.
- The study was further delimited to Body Weight, Height, BMI and Physical Fitness.

**Limitation**

Different religion and Cultural heritage were considered as a limitation of the study.

**Hypothesis**

- It was hypothesized that there would be significance difference on body weight, Height and BMI Index of A.P.L & B.P.L category B.P.Ed students.
- It was further hypothesized that there would be significance difference on Physical Fitness level of A.P.L & B.P.L category B.P.Ed students.

**Methodology**

For the purpose of the study 30 male BPL and 30 male APL, Physical Education students were selected from P.G.G.I.P.E Banipur.

To compare the Height, Weight and BMI, Body weight was measured with the help of weighing machine, Standing height was measured with the help of stadeo meter and BMI was

measured with the help of the height/weight<sup>2</sup> formula.

To compare the general Physical fitness.

**Administration of the test AAHPERD Physical Fitness**

- For speed the students were asked to run as fast as they can up to 50 yards and the result were recorded to the nearest 1/10<sup>th</sup> seconds,
- to measure arm and shoulder strength Pull up test was administered, The subjects were asked to step upon the chair and take a firm grip [ palms facing away from face ] on the bar and as they assumes a straight arm hang, they were asked to perform pull ups. The legal number of pull ups was measured as a result.
- 4×10yds shuttle run test were administered to measure agility and the results were recorder to the nearest 1/10<sup>th</sup> seconds,
- Standing Broad Jump was administered to measure explosive leg strength and the results were recorded in feet and inches.
- Abdominal strength and endurance was measured through Bend knee sit up test for one minute and the number of legal sit up was considered as a result.
- 600 yard Run and Walk test was administered to measured cardio vascular endurance. The subjects were asked to run and walk for a distance of 600 yards with full effort and the time was recorded in 1/10<sup>th</sup> of a second.

To compute all the results Students 'T' test was employed at 0.05 level of significance.

**Finding**

**Table 1:** Mean Standard deviation and 't' test in Height, Body Weight, BMI, Pull ups, Shuttle Run, 50 Yards Dash, 600 Yards Run & Walk, Sit Up, Standing Broad Jump between A.P.L & B.P.L

Variable	A.P.L (MEAN)	A.P.L (S.D)	B.P.L (MEAN)	B.P.L (S.D)	't' ratio
Height	166.58cm	4.86	165.2cm	5.69	.9942
Body Weight	59.2kg	5.784	58.17kg	5.746	.7270
BMI	.0486	.0137	.0501	.0089	.4950
Pull ups	8.533	3.048	6.933	2.128	2.295*
50 Yard dash	6.994sec	.348	7.091sec	.312	3.388*
600 Yard Run and Walk	1.40sec	.0858	1.50sec	.1647	2.94*
Shuttle Run	8.36sec	.258	8.78sec	.399	4.76sec*
Sit up	43	5.71	40	5.24	2.08*
Standing Broad Jump	7.55ft	.129	7.02ft	.0863	5.517*

\*Significant at 0.05 level of confidence is 2.00

**Discussion of Finding and Conclusions**

It is observed that there has been no significance difference of Anthropometric Variables between the students of A.P.L and B.P.L category. This may be due to the reason that the subjects were living together in hostel for last eight months. Their activities, food habits and their working schedule were almost same and so no significant difference was found in weight.

- No significant difference was found in height because it mainly depends upon the heredity rather other than aspects.
- No significant difference was found in BMI as it depends upon height and weight.

It was found that there were significant differences in case of Physical Fitness components. The result shows that there were a significant difference in pull ups, 50 yards dash, 4×10 yards shuttle run, standing broad jump, sit up and 600 yards run and walk tests between B.P.L and A.P.L category. Sit ups evaluate muscular strength and endurance of the abdomen. Sufficient intakes of calorie and proper diet not only develops the strength and endurance and contractibility of the abdominal muscle but also improve the strength and endurance of the

specific muscles of shoulder and arm which was reflected through the significant difference in the pull ups and sit up test. Sufficient calorie intake & balance diet influence the anaerobic capacity and muscle strength it also develops muscle contraction, ATP-PC system to the muscle so it was reflect in the significant manner in Shuttle Run., In case of Explosive leg Strength, significant differences were found because sufficient calorie intake & balance diet develops the higher muscular contraction. Sufficient calorie intake & balance diet also influences the various organs and develop the aerobic capacity and glycogen system and there by a significant difference were found in cardio respiratory endurance.

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