

Comparative Study of Fat Percentage of College Students of Hilly And Plain Areas

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Abstract:

The present study was carried to compare the fat percentage of college students of hilly and plain areas of north Kashmir with special reference to district Bandipora. Sixty (60) male students from different colleges of Bandipora representing different localities. (30 from hilly residences and 30 from plain areas) were selected for the present study using simple random sampling method. 't test' was used to check the level of significance. The present study revealed that the body fat percentage of hilly students 7.23 ± 3.19 was lesser than those living in plains (9.96 ± 2.28) indicating the good, healthy lifestyle and physical fitness of students from high altitudes.

Keywords: Physical Fitness, Fat Percentage, Plain And Hilly Areas.

Introduction:

Today, there is a growing emphasis on looking good, feeling and living longer. Increasingly, scientific evidence tells that one of the keys to achieving these ideals is fitness and exercise. Getting moving is a challenge because today physical activity is less a part of our daily lives. There are fewer jobs that require physical exertion. We have become a nation of observers with more people (including children) spending their leisure time pursuing just that leisure. Consequently, statistics show that obesity and overweight, the problems that come with high blood pressure, diabetes, cardiac arrest, etc. are on the rise. But statistics also show that preventive medicine pays off, so one should not wait until his/her doctor gives an ultimatum. Everyone must take the initiative to get active now. At the same time trying to do too much too soon is not good for health, a complete balance between body metabolism, daily diet and work out is a must for improving fitness, optimum capacity and a perfect harmony in body to feel a sense of perfect well being, for making important social contributions in a system we are part of. Everything in our life is subject to change; positive health will always remain a mirage. Sound health is potential ability of an individual or social group to modify himself or itself continually, in the face of changing condition of life.

Recently, a broader concept of health has been emerging that of improving the quality of life of which health is an essential component. This is at once brings to focus that positive health depends not only on medical action but on all the other economic, cultural and social factors operating in the community.

Body Composition:

The human body is composed from many major components including water, minerals, protein and fat. Increases in the levels of fat components are detrimental to health and also to sports performance. Timely quantifying body fat in relation to health and to sports performance is necessary for athletic outlook and stamina. The mineral components are mainly associated with bone. Consequently, a number of techniques for assessing body composition have been developed over the years. The human tissues comprise of adipose tissue, muscle, bone, nerves and epithelial tissue. The relative amounts of adipose tissue, muscle and bone are of importance for health and sports performance, and as a result of methods of body composition analysis have been categorized into fat mass and fat-free mass (FFM) (also referred as lean body tissue).

Fat mass include adipose tissue, whereas fat-free mass includes water, protein and minerals. Large amount of fat mass are associated with health problems. In essence a large fat mass results in obesity and the various health problems associated with being obese e.g. (cardio vascular diseases, diabetes, cancers, etc). There is an inverse relationship between fat mass and performance of activities that involve jumping or

running, although not for distance swimming. A high percentage body fat results in impaired aerobic capacity and also high intense bouts of exercises where the need is for a high force-producing mass. Muscles are a force-producing mass but adipose tissue is not. There is substantial evidence for fat-free mass being positively related to performance of activities that require application of force such as in weight-lifting and throwing, although no muscle bulk may impede jumping and running. Various sports demand variations in the amount of fat-free mass and fat mass. In the case of the latter, the normal means to report % body fat. The normal range for % body fat is 10-20% for young males and 20-30% for young females. Levels above the upper range constitute obesity, whilst for sports performers the % body's' scores are expected to be in the lower half of the range, I.e.10-15 and 15-20% for males and females, respectively. Hence it is important to be able to measure fat-free mass and fat mass.

Methodology:

For the present study, Comparison between college students of hilly and plain areas viz a viz their body fat percentage following methodology was followed:

Fat Percentage:

Equipment: Skin fold caliper

Skin fold measurement for males.

1. Chest
2. Abdomen
3. Thigh

- **Chest skin fold:**

The skin fold of subject was picked just next to the anterior axillary fold (front of armpit line) and measured half inch from the finger and approximately one inch from the anterior axillary line towards the nipple while sitting on table with chest naked.

- **Abdomen skin fold:**

A horizontal fold is picked up slightly more than one inch to the side of and one half inch below the navel of the subject standing erect with naked abdomen, hanging arms by the sides.

- **Thigh skin fold:**

A vertical fold on the front of the thigh mid way between the hip and the nearest border of the patella or knee cap of the subject sitting on a table with naked thigh was taken. The skin fold caliper was placed gently into the grasped skin without removing the fingers and the thickness of skin was recorded from the indicator needle of dial. It was measure to the nearest millimeter.

Weight:

Equipment: weighing machine

Procedure:

The subject was asked to stand erect on the platform of the weighing machine with equal weight on both feet. The weight of subject was recorded accurate up to 0.05 kg.

Statistical, Analysis:

The statistical analysis of the data gathered was done using 't' test and significant difference between fat percentage of two groups was observed.

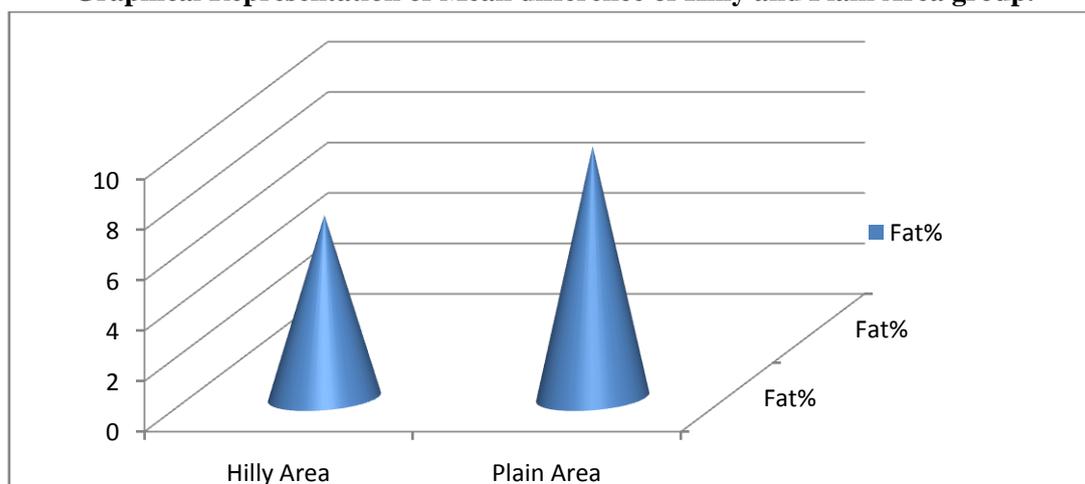
Comparison of Fat Percentage of College Students of Hilly and Plain Areas

| Group | Mean | S.D. | Mean Difference | Degree of Freedom | O.T | Tabulated 't' |
|------------|------|------|-----------------|-------------------|------|---------------|
| Hilly Area | 7.23 | 3.19 | 2.73 | 58 | 3.81 | 2.00 |
| Plain Area | 9.96 | 2.28 | | | | |

Level of significance =0.05 Tabulated 't' 0.05 (58) =2.00

The above table reveals that there was significant difference between mean of Hilly Area group and Plain Area group because mean of Hilly Area group is 7.23 which is less than the mean of Plain Area group 9.96 so the mean difference where found as 2.73 to check the significant difference between Hilly Area and Plain Area group the data was again analyzed by applying 't' test. Before applying 't' test, standard deviation was calculated between Hilly Area and Plain Area group. Where S.D. of group Hilly Area =3.19 and S.D. of group Plain Area =2.28 and the calculated value of 't' where found 3.81 which greater than tabulated t=2.00 at 0.05 level of significance. This shows that Plain Area college students are having more fat percentage than Hilly Area college students. This has been presented graphically in figure No -1.

Graphical Representation of Mean difference of Hilly and Plain Area group.



Conclusion And Recommendations:

The present study revealed that the people of hilly area are more active with less body fat as they are used to uphill and downhill tracking on daily basis, besides they work out more than the respective cohorts in plains. Besides their physical fitness, they rely more on natural products viz food, medicines etc.

Some recommendations which are useful for maintain a balanced body fat level:

- ❖ To bring awareness among people to engage in regular physical activity and reduce sedentary activity to promote health, psychological well being and a healthy body weight
- ❖ To bring awareness among people about importance of purposeful physical activity very early in life and its continuation throughout their lives.
- ❖ To maintain body weight in a healthy range.
- ❖ To prevent gradual weight gain over time
- ❖ Timely quantifying body fat in relation to health and to sports performance.
- ❖ Regular morning walks shall be helpful in reducing fats.

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