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A COMPARATIVE STUDY OF HEART RATE AND BODY FAT PERCENTAGE AMONG UNIVERSITY STUDENTS

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Abstract:

The present study will aware to the teachers, parents and students about university students health status and to further research projects in this field will be helpful in planning out a health programme of other students like colleges, Schools on the basis of findings and conclusions. Thus, it would lead to improvement the standard of health status in Universities.For fulfillment this purpose researcher compareshеart rate and body fat percentage of CBLU students. The study was carried out on 158 students (who studied in different departments of Chaudhary bansilal university) were taken to help in assessing and comparing the difference in total heart rate and body fat percentage. The data was collected by use of measurements of heart rate and body fat percentage. The data was analyzed and compared with the help of statistical procedures in which arithmetic mean, standard deviation (S.D.), correlation were employed. The value of correlation was 0.056 which shows that the positive correlation between university student's heart rate and university student's body fat percentage.

Key Words: Heart Rate, Body Fat Percentage & University Students

Introduction:

The body fat percentage (BFP) of a human or other living being is the total mass of fat divided by total body mass, multiplied by 100; body fat includes essential body fat and storage body fat. Essential body fat is necessary to maintain life and reproductive functions. The percentage of essential body fat for women is greater than that for men, due to the demands of childbearing and other hormonal functions. Storage body fat consists of fat accumulation in adipose tissue, part of which protects internal organs in the chest and abdomen. The minimum recommended total body fat percentage exceeds the essential fat percentage value reported above. A number of methods are available for determining body fat percentage, such as measurement with calipers or through the use of bioelectrical impedance analysis.

The body fat percentage is a measure of fitness level, since it is the only body measurement which directly calculates a person's relative body composition without regard to height or weight. The widely used body mass index (BMI) provides a measure that allows the comparison of the adiposity of individuals of different heights and weights. While BMI largely increases as adiposity increases, due to differences in body composition, other indicators of body fat give more accurate results; for example, individuals with greater muscle mass or larger bones will have higher BMIs. As such, BMI is a useful indicator of overall fitness for a large group of people, but a poor tool for determining the health of an individual.

Bioelectrical impedance analysis (BIA) is a commonly used method for estimating body composition, in particular body fat and muscle mass. In BIA, a weak electric current flows through the body and the voltage is measured in order to calculate impedance (resistance) of the body. Most of our body water is stored in our muscle. Therefore, if a person is more muscular there is a high chance that the person will also have more body water, which leads to lower impedance. Since the advent of the first commercially available devices in the mid-1980s the method has become popular owing to its ease of use and portability of the equipment. It is familiar in the consumer market as a simple instrument for estimating body fat. BIA actually determines the electrical impedance, or opposition to the flow of an electric current through body tissues which can then be used to estimate total body water (TBW), which can be used to estimate fat-free body mass and, by difference with body weight, body fat.

Research Methodology:

A systematic process and methodology is needed to conduct a research in a successful manner. This section of the study highlights the methodology and process used to conduct the present research. This section highlights the objectives and procedure of the study. Further, this section discusses the research methodology adopted for attaining the objectives of the study. Properly conducted research reduces the uncertainty level for the top management in making critical decisions. Hence, it is extremely important to describe the research methodology here.

Research Design:

Type of research is based on the nature of data. In the light of the nature of data, the present research is mainly of a quantitative nature, as most of the findings of the present study are based on quantified measures. However, the researcher also manipulated the causality and consequences, which also represented a sign of

qualitative research. In the light of purpose of research, the present study was mainly of applied nature as the researcher tried to know about the Blood pressure and body fat among university students, CBLU, Bhiwani. Further, the survey method was adopted by selecting and studying a sample chosen from the physical fitness points of view.

Hypothesis:

It was hypothesized that there would be positive correlation between university student's heart rate and university student's body fat percentage.

Delimitation:

- The study covered CBLU students in Dist. Bhiwani.
- The students of 18-25 year of age were selected.
- The researcher studied the heart rate and body fat percentage of CBLU, Bhiwani students.

Methodology:

The researcher followed the survey research method in this study.

Sample Size:

The data for the study was collected from the Bansilal university campus students of Bhiwani dist (158 students).

Tools Used:

Omron karada scan (body composition monitor HBF-375) to use full body sensing technology for a more accurate and precise body composition measurement and a choicemmed MD300C2 fingertip Pulse Omimeter to measure resting heart rate.

Collection of Data:

The researcher personally contacted all respondents for the collection of relevant data and after brief explanation about the purpose of the study.

Table 1: Descriptive statistics of heart rate and body fat percentage among university students

Group	Variable	N	Mean	S.D	Correlation
University Students	Heart Rate	158	91.56	13.13	0.056
	Body Fat Percentage		23.99	4.86	

Table 1 indicates the values of descriptive statistics of the heart rate and body fat percentage of university students, which shows that the mean and S.D. values of heart rate and body fat percentage of university students was found to be 91.56±13.13 and 23.99±4.86 respectively. Above table also indicates the correlation between university student's heart rate and university student's body fat percentage, the value of correlation was 0.056 which shows that the positive correlation between university student's heart rate and university student's body fat percentage.

Conclusion:

Conclusion hypothesis testing research scholar was limited knowledge, achievement, related literature and expert's opinion then after hypothesis of the study. It was hypothesized that there would be positive correlation between university student's heart rate and university student's body fat percentage. Table 1 indicates the values of descriptive statistics of the heart rate and body fat percentage of university students, which shows that the mean and S.D. values of heart rate and body fat percentage of university students was found to be 91.56±13.13 and 23.99±4.86 respectively. Above table also indicates the correlation between university student's heart rate and university student's body fat percentage, the value of correlation was 0.056 which shows that the positive correlation between university student's heart rate and university student's body fat percentage. Hence the hypothesis was accepted, so there is positive correlation between university student's heart rate and university student's body fat percentage.

Recommendations:

- The similar study may also be conducted on school level students with other stream students.
- The similar study may also be conducted among different stream students of university level.
- The similar study may also be conducted among different stream students of college level.
- The similar study may also be conducted among different age groups of sports person.
- The similar study may also be conducted on teachers of different streams.

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