Comparative Analysis of Pupil Teachers' Body Mass Index and Fat Percentage

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Abstract

The current study's goal is to discover whether male and female B.Ed. students have different body compositions. 100 B.Ed. students, 50 of each sex, were chosen from D.A.V. Training College in Kanpur to fulfill the study's principal goal. Weighing scales, a stadiometer, and a skin fold caliper were used on the individuals to collect the data, and the resulting data was then analyzed using a "t-test" with a significance threshold of "0.05". According to the study, there was a partial variation in body composition between male and female B.Ed. students at D.A.V. Training College in Kanpur. This study may aid in educating athletes and students alike about their fitness level and fat percentage when engaging in any physical activity. Because of this, the current study implies that further generalization can be achieved through large-scale research.

Keywords: *Body Composition, Body Mass Index, Fat Percentage, Skin Fold*

Introduction :-

Learn sets humans unique from other animals, in addition to the fact that we are a social species. Because of his intelligence, he can modify his animal tendencies to better serve the interests of society and the world around him. Education, on the other hand, is what helps a person become more intelligent and develop their talents, which is necessary for making satisfactory development in life. *Education* is a procedure that allows a man to gain information via a conductive attitude, which is vital for being a human being. This knowledge is acquired through the educational system. Education is a process by which the young are given the information, character, and conduct they will carry with them throughout their lives. It is a positive process that promotes awareness and the development of a person's physical, mental, emotional, social, intellectual, and spiritual selves. In conclusion, education promotes holistic, balanced, and overall growth, resulting in a dynamic personality and a civilised, mature, and responsible member of society. Education includes life preparation. It should assist everyone in realizing their full potential. The development of the best possible organic health, vigour, emotional stability, social awareness, knowledge, positive attitude, spirituality, and moral values, must be a priority in education.

Physical education, which aspires to build physically strong, cognitively sound, emotionally balanced, and socially adaptable persons, may help educators accomplish these educational goals. Therefore, physical education is a crucial component of general education, which attempts to prepare students for a complete and abundant existence in a constantly changing environment. Physical education and sports promote the development of core human

abilities necessary for everyday tasks and social skills that enable a person to become a well-adjusted and contributing member of society. The significance of feeling well, looking nice, and living longer has increased. As has been scientifically shown, fitness and exercise are essential for achieving these objectives. People are becoming much more mindful of their health situation nowadays since it is an aspect of life that enables one to live fully and assist others. The fundamental physical, mental, emotional, and social requirements may be met correctly to help a person attain, maintain, and enhance their health. People are becoming increasingly interested in physical activity, fitness, and education in general in this extraordinary age. Heart rate, endurance, blood pressure, or cholesterol level are sometimes used to quantify fitness. This critical measurement may be a good indicator of one's overall health and is thus undoubtedly tied to fitness. Several physiological terminologies pertain to a person's level of physical fitness. Body Composition, a component of Anthropometrics, has emerged as a crucial element of adult fitness.

The human body comprises a wide variety of components, all of which are essential for survival. Some of them are water, muscle, bone, organs, and fat. However, fat is an essential component of the human body that is required to provide energy for prolonged physical activity, insulation from the cold, and protection for crucial organs. One of the most critical aspects of exercise for health is body composition. The components of the human body that are made up of fat and non-fat are referred to as having a "body composition." Body composition is a word used in the context of physical fitness to define the amount of fat, bone, and muscle in human bodies since muscular tissues make up a minor part of our bodies. According to the National Institutes of Health, a healthy adult male's body should contain between 13 and 17 percent fat. Levels considerably higher than these ranges suggest an excess body fat percentage lower than these ranges. Depending on the activity, most athletes often perform better when their body fat percentage is between 7 and 19 percent for men and 10 to 25 percent for women.

Literature Review :-

According to Antal et al. (2009), obesity is rising sharply in adults and children. The survey's goal was to evaluate the anthropometric information of students in Budapest's primary schools between the ages of 7 and 14 according to their gender and age. In 2005, a cross-sectional investigation was conducted. In all, 1,928 kids were chosen from the schools (1,002 males and 926 girls). Sites for the representative sample were chosen at random. Height and waist circumference measurements were made, and additional information was examined using an 8-polar bioelectrical impedance technique. SPSS 11 for Windows was used for the statistical analysis. 5.1, 18.1, and 7.4% of boys and 6.8, 19.6, and 6.3% of girls were underweight, overweight, or obese based on body mass index (BMI). According to body fat percentage (%BF), obesity was prevalent in 17.9% of boys and 12.8% of girls. According to their %BF, 49% of boys and 28% of girls classified as overweight by BMI were also obese. Boys and girls with BMIs between normal and obese had waist circumferences that differed by 24.7 cm and 20.5 cm, respectively. The difference between individuals classified as non-obesity and obese by %BF was 17.3 cm for males and 16.4 cm for girls. Boys and girls with high%BF who were

average weight and overweight had considerably larger waists than those with normal%BF. This indicates that many obese youngsters can go unnoticed if they are labeled overweight based on BMI. The findings seem to emphasize the significance of measuring waist circumference and percent body fat in epidemiological research in order to identify patients who are obese in addition to BMI.

A.V.N. (2016) . compared the lifestyles of government and private school teachers with hypertension in Erode district as part of his Master of Science in Nursing degree at Shivparvathi Mandradiar Institute of Health Science, Tamil Nadu Dr. M. G. R. Medical University, Chennai, April 2016. Study goals: 1. Evaluate the lifestyles of hypertensive public and private school teachers. 2. Compare government and private school teachers' lifestyles with hypertension. 3. Determine the relationship between lifestyle and background characteristics in government and private school teachers with hypertension. H1: Government and private school instructors with hypertension had different lifestyles. Government and private school instructors with hypertension have a substantial connection between lifestyle and background characteristics. Under the heading, 1. Hypertension prevalence and determinant studies 2. Hypertension knowledge and attitudes The researcher built the conceptual framework on Roy's adaption model. Non-experimental descriptive comparative research design. Physicians and nursing specialists confirmed the data-gathering instrument. The structured knowledge questionnaire's test-retest reliability was 0.9. Purposive sampling was used to choose 82 research samples, and a structured lifestyle questionnaire was used to gather data. Month-long data collection. Manually edited, tabulated, analyzed, and interpreted data. Government school instructors with hypertension had a mean value of 4, SD 6.69, Range 23, whereas private school teachers had 56, SD 5.6, Range 24. The mean lifestyle difference between Government and Private school instructors was 9, and the t-value was 5.4, which was significant at P0.05. The research found that Government and Private school teachers with hypertension had quite different lifestyles. Private school teachers with hypertension had a substantial connection between lifestyle and income. No demographic variables were linked to lifestyle among hypertensive government school teachers. Implications, limits, suggestions, and conclusions were obvious.

Yousif (2022) . BMI is routinely used to diagnose obesity and overweight. However, its efficacy in diagnosing obesity's deleterious consequences is questioned. This research compares BMI and BF in diagnosing obesity-induced ventilatory problems. We studied 150 healthy male students, ages 17 to 25, with a mean age of 20.8 2.6. We assessed participants' BMI, BF%, and pulmonary function. BMI and BF% values classed pupils as overweight-obese or usual. Chi-square tested group differences. One-fifth of individuals had a fat mass, 20%, and 90% were overweight or obese (p 0.05). 20% of the overweight-obese group had a significant decrease in FEV1 (p= 0.025, Relative Risk= 3.00, 95% Confidence Interval= 1.13-7.99) and 23% decreased in FVC (p= 0.012, Relative Risk= 3.11, 95% Confidence Interval= 1.26-7.68). Statistically, FEV1/FVC did not change. BMI categories did not influence dynamic lung volumes. In diagnosing obesity-induced pulmonary function problems, BF% is better than BMI. Population health research should not use BMI to measure obesity.

Methodology:-

Just as any research project requires a methodical approach, this study follows the following procedures, which include details on the research's design, data source, sampling strategy, subject selection, data collecting, criteria measures, and other factors.

Source of Data: Data was gathered for the current research from B.Ed. Students at D.A.V. Training College in Kanpur.

Sample Technique: The individuals for the research were chosen using a straightforward random sampling technique.

Subjects Selected: The researcher chose 100 B.Ed. Students from D.A.V. Training College in Kanpur, 50 of whom were male, and 50 of whom were female.

Data collection: Both male and female students were subjected to data collection using various equipment, including a stadiometer, weighing scales, and skin fold callipers.

Criterion Measure: 50 students from each sex were used to compare 100 B.Ed. Students from D.A.V. Training College in Kanpur. The researcher administered the following measures:

A. *Body Mass Index:*

1. Height - Stadiometer

2. Weight- Weighing Machine

B. *Fat Percentage:* Skin fold Caliper

Procedure: The individuals were individually contacted and a relationship was built before informing them of the study's goal. The exams were given precisely following the guidelines provided in the relevant manuals.

Results:-

The table below shows the statistical analysis of the information acquired for comparing body composition between male and female B.Ed. Students at D.A.V. Training College, Kanpur:

Table – 1
Showing difference between B.M.I. of pupil teacher's

Group	Mean	S.D.	S.E. Comb.	M.D.	O.T.	T.T	D.F.
Male	22.179	3.420	0.760	1.316	1.730	1.980	98
Female	20.864	4.149					

level of Significance at 0.05

Students utilized the B.M.I.'s t-test to examine the data to determine if there was a statistically significant difference between men and girls. Standard deviation was determined before the "t-test" was applied; the pre-test S.D. was 3.420, the post-test S.D. was 4.149, and their combined standard error was 0.760. The "t" test was then used. Because the computed value of t = 1.730 is smaller than the tabulated value of t = 1.980 at the 0.05 level of significance, it was determined that there is no significant difference between the B.M.I. of men and females.

Table - 2
Showing Comparison between Fat Percentage of pupil teacher's

Group	Mean	S.D.	S.E. Comb.	M.D.	OT	T.T	D.F.
Male	11.854	3.593	0.953	8.676	9.108	1.980	98
Female	20.530	5.698					

level of Significance at 0.05

The "t-test" was performed to analyze the data to determine if there was a discernible difference in the fat percentage between male and female pupils. Before using the "t" test, the standard deviation was computed. The standard deviation for men was 3.593, the standard deviation for women was 5.698, and their combined standard error was 0.953. Because the computed value of t = 9.108 is higher than the tabulated value of t = 1.980 at the 0.05 level of significance, it was determined that there is a significant difference between the fat percentage of male and female students.

Conclusion and Future Scope:-

The body composition of male and female B.Ed students at D.A.V. Training College in Kanpur was found to be significantly different in part after the findings from the approaches indicated were analyzed. The findings of this study might aid in educating students and athletes about their body fat percentage and level of fitness before engaging in any physical activity. It is possible to do similar research again using the same individuals and physiological characteristics. Various age groups may be included in this research. It is possible to do similar research once again on game players.

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