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Analytical Study on Physical Fitness of University Students

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Abstract

The researcher enlisted the aid of colleagues, classmates, coaches, and other professional pals in order to accurately record data from various test items. In this research, we analyzed the data using the mean, standard deviation, and 't'-test; we utilized SPSS software to do each step of the 't'-test; and we compared our findings to a significant value at the.05 level of confidence. Physical fitness factors such as standing wide jump, 50-meter run, sit-and-reach test, zigzag run, and 1.5-kilometer run were shown to have statistically significant differences, leading us to reject our hypothesis about these tests. Our hypothesis about the aforementioned physiological factors were disproved by the observation of substantial differences. Results showed no statistically significant difference between private and government school students on any of the physical fitness variables measured, and the data also showed that private students had higher mean scores on the physical fitness variables measured, including the standing broad jump, the 50-meter run, the sit-and-reach test, the zigzag run, and the 1.5-kilometer run. Data revealed that private university students had higher averages across the board for body composition variables like height, weight, BMI, and body fat compared to their public university counterparts, but found no statistically significant differences between the two groups.

Keywords: Physical fitness, colleagues, run, zigzag

Introduction

Physical fitness is one of the core preconditions of health. We cannot imagine a person to be healthy without being physicallyfit. Physical fitness, therefore needs to be appreciated in fullmeasure. The common perception of physical fitness is theabsence of ailment. If individual is not suffering from anyperceptible disease, then he is considered physically fit. Is ittrue? Another significant issue is whether there is a universalcondition of physical fitness which is uniformly applicable toall. It is not so. Physical fitness of young people is differentfrom that of the aged. The physical fitness of a sports personis different from that of the persons working in army factoryor a layman. In fact, physical fitness means different things todifferent people. In this lesson, let us discuss various aspectsof physical fitness.

Physical Fitness and its Importance In earlier classes, physical fitness has been defined as the capacity of a person to carry out the daily activities without undue fatigue. Physical fitness is considered as a measure of the body's ability to function efficiently and effectively during work and leisure activities. In order to remain physically fit and healthy, we need to engage ourselves in physical activities and take measures for physically fit. Physical fitness is an important area of discussion as the number of children's becoming obese. The normal physical activities, which were done in earlier times both at home and outside as part of day-to-day routine have reduced due to development of science and technology. The work that was done manually is now being carried out by machines. The use of automated equipment such as automatic machines, remotes,

mobiles and changes in lifestyles affect health and physical fitness. It has become a matter of deep thinking for all of us. Now a days we find increased marketing of packaged food and diet for physical fitness. Many such health products now are advertised on TV and radio, and in newspapers, booklets and magazine. It is important for all of us to understand that physical fitness cannot be achieved without doing physical exercise regularly. We should not resort to any shortcut that is frequently advertised in the media these days to achieve fitness or maintain balance in life style. Moreover, these products may have side effects in our daily life.

There is no doubt that physical fitness is important in every person's life, as a decent person has an ideal weight and can maintain it easily. It also avoids many diseases and health problems just by exercising regularly. Fitness also has an impact on the muscular system and works to develop and strengthen it, as it reduces the prevalent diseases, especially heart disease and excessive obesity. On the psychological side, fitness can enhance one's self-confidence and reduce the chance of stress, anxiety or depression. It also helps build an attractive personality. Physical Fitness has many benefits for your body and health. It improves your overall health, increases the size of the lungs, and enhances the size of the heart and works with organized beats**.**

Literature Review

Popławska, Helena & Dmitruk (2020) Multiple variables influence a person, a community, or a population's body composition, fitness level, and level of physical activity. Resources and procedures. Students from the University of Physical Education (UPE) and the State School of Higher Education (SSHE) in Biala Podlaska participated in the study. The class was split into three halves. UPE students majoring in physical education (PE) made up the first group, UPE physiotherapy students made up the second, and SSHE students rounded out the third. There were a total of 1107 people studied, 563 females and 544 men. The IOI 353 body composition analyzer was used to measure the subjects' height, weight, waist, hips, and six skinfolds, from which various fat tissue distribution indices were derived. We used the IPAQ (International Physical Activity Questionnaire) to measure how active people were. The participants took EUROFIT exams to measure their fitness levels. The Shapiro-Wilk and Kruskal-Wallis tests were used for the statistical analysis. Results. In terms of height, muscular mass, and lean body mass, as well as activity and fitness levels, PE students had the highest values. The physiotherapy student body was the largest and fattest of all. Body height, weight, muscular mass, and lean body mass were all significantly lower among SSHE students. The lowest levels of total body water were likewise demonstrated by this group. This school's students performed the worst on a battery of fitness tests, including the standing wide jump, the 10-by-5-meter shuttle run, and the sit-and-reach. The SSHE females likewise had the lowest rates of overall physical activity. Conclusion. Physical activity, fitness levels, and body composition of individuals were found to vary by academic discipline.

Mialich, Mirele & Covolo (2014) College students' physical composition and way of life are affected by their behavioral, psychological, financial, and cultural environments. The purpose of this study was to examine the relationship between body composition and dietary and physical activity habits among a group of USP Ribeirao Preto health majors. The methodology used in this research was a cross-sectional survey of 501 students enrolled in Ribeirao Preto Campus courses at the University of So Paulo. Bioelectrical impedance analysis was used in addition to standard measures of height and weight to evaluate body composition. The International Physical Activity Questionnaire (IPAQ) was then used, namely the abbreviated form. The findings showed that women made up the majority of the sample (73.05%), with men making up the remaining 26.95%. Age was on average 20.42.8 years, weight was on average 6313.5 kg, height was on average 1669.0 cm, body mass index was on average 22.43.4 kg/m2, body fat percentage was on average 24.07.5%, and fat-free mass was on average 45.310.3 kg. Even though 70.8% of the

pupils were within the normal BMI range, they nevertheless had excessive amounts of fat mass. Sedentary (10.2%), irregularly active (39.3%), active (42.1%), and highly active (8.4%) were the IPAQ categories used to categorize the participants. While the majority of the college students in this study fell into the "normal weight" category according to BMI, the high amounts of body fat mass that were nevertheless identified should not be disregarded. In addition, over half of the students (49.5%), while being classified as active by the IPAQ, were irregularly active or sedentary.

Nurhasan, &Wiriawan, (2020) The high intensity of exercise is beneficial to health and fitness. The best predictor of future performance and health is a person's level of physical fitness. The goal of this research was to assess the fitness and activity levels of college students. This investigation combines test and measurement strategies with analytical, observational methodologies. To gather this information, 490 participants, 217 men and 273 females, aged 18 to 23 years old, who met the inclusion criteria, were recruited. Validity and reliability studies have been successfully completed on the International Physical Activity Questionnaire (IPAQ) and a battery of tests designed to assess fitness levels. One instrument assessed body mass index, another tested cardiovascular fitness with a 1.6-kilometer run, another measured musculoskeletal fitness with a wall half squat, and still another measured flexibility with a sitting and reaching test. There were 93 pupils (18.98%) classified as having a low level of physical activity, 212 students (43.27%), and 185 students (37.75%) classified as having a high level of physical activity. Results from fitness tests revealed that men need to work on their musculoskeletal fitness, while women should focus on their cardiovascular fitness.

Kochman, Maciej & Kasperek (2022) To the best of our knowledge, no studies have particularly focused on physiotherapy students and the connection between physical fitness and body composition in young people. The purpose of this observational research was to compare first-year and final-year Polish physiotherapy students in terms of their fitness levels, as measured by a variety of anthropometric and body composition measures. (Two) Techniques Students in their first and fifth years of physiotherapy school (50% women) were randomly chosen and split into two groups of 100: A (19–22-year-olds) and B (23–28-year-olds). Physical fitness was evaluated with the help of Zoochore's Physical Fitness Index, and body composition was determined with the help of a Tanita TBF-300 Analyzer. 3. Outcomes Group B students were found to have a better level of overall fitness ($p = 0.0261$), whereas Group A students had lower values of the fat mass index ($p = 0.0441$). There were significant negative correlations between general fitness and the following indices in Group A: fat percentage ($R = 0.4$; $p = 0.0018$), fitness mobility ($R = 0.3$; $p = 0.0310$), fat-free fitness mobility ($R = 0.3$; $p = 0.0229$), and total body weight ($R = 0.4$; $p = 0.0024$). Final Thoughts (4) Differences in fitness, and other anthropometric measures were found between the groups. Overall fitness was greater among older students, but the mean value of body fat index was lower among younger students.

Mohajan, Devajit & Mohajan, Haradhan. (2023). In order to maintain proper physiological processes, including temperature regulation, energy production for all of one's physical activities, and organ protection, a certain quantity of body fat is required. Adipose tissue is where excess bodily fat stores itself. The amount of fat a person has is the sum of their vital fat and their store fat. The proportion of body fat now is one of the most reliable measures of obesity. Clinicians should employ the most relevant, accurate, and easily accessible methodologies from the scientific research community to make an accurate determination of body fat. The accuracy of the nutrition evaluation and the health and wellbeing of the person depend on the measurement of body fat and lean body mass. Methods for accurately calculating a person's BFP via an examination of the "fat mass" and "fat free mass" components of the two-compartment model are described.

Research Methodology

Data sources, sample selection, data collection, criterion measures, instrument reliability, test administration, item descriptions, and statistical methods for analyzing the results were all covered in this section.A convenience sample of 200 male and female college students (100 from each institution) from Mewat district, Haryana State, was chosen at random for the research.

The researcher created the questionnaire with the aid of consultants and his research manual. The characteristics associated with physical fitness were examined using the AAHPER juvenile fitness test battery and the Barrow fitness test. The AAHPER youth fitness test utilized was the 1976-finalized version. The AAPHER Youth Physical Fitness Test consists of a 50-meter dash, a standing broad jump, a 1.5-kilometer run, and the Barrow's 3-item Battery for the Zig Zag. The research included a run test and a flexibility test for a sit and reach

Data Analysis

The purpose of this research was to examine the differences between male and female students at Private and Government Universities with respect to their levels of physical fitness, physiological health. The t-test was used to make the aforementioned comparisons, and the tables below provide the means, standard deviations, degrees of freedom, and standard errors of the differences. Each table and graph display data with an accompanying explanation.

The scores obtained, their range, and their lowest and maximum values are all shown in Table 1 to 6. Mean, standard deviation, mean difference, and t-test calculations could all be performed on the full dataset comprising the physical fitness, selected physiological,variables of boys and girls attending both Private and Government Universities. The data on fitness, physiology, were tallied individually. Each characteristic related to physical fitness, physiological state, was tabulated independently. T-test related computations were also prepared in a variable-by-variable format. The t-test was computed using the graph-pad method of statistical analysis. T-test results were compared to the p-value using a 98% confidence interval and a significance threshold of 0.05.

Table 1: Comparison of 50 meter run between Private and Government Universities' boys' students

Groups	Mean	SD	D.F.	S.E.D.	't'- ratio
Private Universities	**6.25**	**0.24**	**98**	**0.11**	**6.159***
Government Universities	**6.89**	**0.77**			

Table 1 show that the 50-meter dash means 6.25 and 6.89 for male students at private and public universities, respectively, with a standard deviation of 0.24 and.77 for male students at private and public universities, respectively. A value of 0.11 was also obtained for the standard error of the mean. When comparing the mean scores of male students at Private and Government Universities, a statistically significant difference was found (t = 6.159, p 0.05). in a 50-meter dash, disproving our original theory.

Table 2: Comparison of standing broad jump between Private and Government Universities' boys' students

Groups	Mean	SD	D.F.	S.E.D.	't'- ratio
Private Universities	2.52	0.51	98	0.11	7.832*
Government Universities	2.61	0.59			

Table 2 shows that the mean standing broad jump score for male students at Private and Government Universities was 2.52 and 2.61, and that the standard deviation for Private and Government University male students was 0.51 and 0.59. A value of 0.11 was also obtained for the standard error of the mean. We detected a significant difference between the means of the Private and Government Universities' male students' standing broad jump performances (t = 7.83, p 0.05), thereby rejecting our null hypothesis.

Table 3: Comparison of 1.5 k.m. Run between Private and Government Universities' boys' students

Groups	Mean	SD	d. f.	S.E.D.	't'- ratio
Private Universities	6.27	0.85	98	0.12	1.314**
Government Universities	6.43	0.90			

The table below shows the median GPA for male students at both private and public universities. The mean time for males attending private and public universities to complete a 1.5-kilometer (0.9-mile) run was 6.27 and 6.43 minutes, respectively, with a standard deviation of 0.85 and 0.90 seconds. A value of 0.12 was also obtained for the standard error of the mean. The t-test resulted in 1.314, which was not statistically significant at the 0.05 level of significance, indicating that a significant difference was discovered between the means of Private and Government Universities' 'male' students in the 1.5-kilometer run, leading us to reject our hypothesis.

Table 4: Comparison of sit and reach test between Private and Government Universities' boys' students

Groups	Mean	SD	d. f.	S.E.D.	't'- ratio
Private Universities	11.70	1.34			
Government Universities	13.84	1.18	98	0.253	8.47*

Table 4 shows that the mean score for boys at Private and Government Universities on the sit and reach test was 11.70 and 13.84, and that the standard deviation for boys at Private and Government Universities was 1.34 and 1.18. A value of 0.253 was also obtained for the standard error of the mean. The t-value of 8.47 was statistically significant at the 0.05 level, indicating that there was a significant difference between the means of the sit and reach tests taken by male students at Private and Government Universities.

Table 5: Comparison of zig zag run between Private and Government Universities' boys' students

Groups	Mean	SD	d. f.	S.E.D.	't'- ratio
Private Universities	12.39	0.48	98	0.09	0.56**
Government Universities	12.45	0.46			

Table 5 shows that the mean score for males at private universities was 12.39 and at government universities it was 12.45, while the standard deviation for boys at private universities was 0.48 and at government universities it was 0.46. With a value of 0.09, the standard error of the difference was also determined. The t-test resulted in 0.56, which is statistically significant at the 0.05 level, indicating that there was a significant difference between the means of the zig-zag run times recorded by male students at Private and Government Universities.

Table 6: Comparison of WBC betweenPrivate and Government Universities' boys' students

Groups	Mean	SD	d. f.	S.E.D.	't'- ratio
Private Universities	9093.28	49.65	98	105.6	1.48**
Government Universities	8990.58	48.26			

The table shows that the mean and standard deviation for male students at private and public universities in WBC are 9093.28 and 8690.58, respectively, and 49.65 and 48.26, respectively. With a result of 105.6, the margin of error was also calculated. We discovered a significant (at the 0.05 level of significance) difference between the means of Private and Government University male students' WBC scores, thus we reject the null hypothesis that there is no difference between the two groups. The t-value was 1.48.

Conclusion

It may be especially important to influence healthy lifestyle choices at the time when young adults are making the transition from high school to the freedom of college. This is the first research of its kind to examine the health of incoming college freshman, focusing on individuals from high-risk groups for chronic illness. To further understand when and how health profiles are changed, future research should examine these transitions naturally occurring among college students. As students make the transition from high school to college life, it is important to understand the unique regulations, processes, and environmental elements on college campuses that might influence health habits. These observational studies may provide the foundation for important intervention techniques that might be applied on university campuses to equip students with transferable, lifelong health-related skills that enhance their formal education.

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