

Mini Review

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A Comparative Analysis of Physical Activity to Determine the Importance of Exercise in Physiotherapy

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Abstract

In order to prescribe exercises for achieving "the perfect body composition," it is necessary to identify the ideal combination of physical characteristics and physical activity. This study examines the body composition and fitness of individuals who differ in their weight, height, age, sex, body frame, and level of physical activity (heavy, moderate, light). Physical features, physical activity levels, and body composition were evaluated in 88 participants aged 20 to 40. Due to their excessive fat mass (28.45), higher BMI, and lower levels of physical activity, overweight people were identified as having a dangerous health status. The study also revealed that overweight people had larger body frames than underweight or average weight people. While those who were lean had extremely low body fat percentages and were very active. Because of the abnormal drop in fat percentage that renders them physically unfit. It can be said that a person's degree of physical features and personalized recommendations for physical activity and exercise in physiotherapy, body composition may be thought of as the optimal metric for measuring physical fitness.

Keywords: Body composition; Physical characteristics; Physical activity; Body fat; Lean Body mass

Introduction

This study examines the body composition and fitness of people with a range of physical parameters, including weight, height, age, sex, body type, and degrees of physical activity, such as heavy, moderate and light. These unique variations affect each person's body composition and degree of physical fitness differently. The goal of the current study was to assess these changes and determine the perfect mix of physical traits and physical activity needed to achieve the perfect body composition. According to the adage body fat, not weight, is the measure of perfect health and fitness, body composition analysis need to be a crucial component of every person's physical fitness profile, independent of body weight, according to NIH'S Health Implications of Obesity.

Importance of body composition and its analysis

According to Wilmore JH & Behnke AR, Body Composition is a crucial aspect of a person's health and physical fitness profile [1,2]. Body composition is regarded as the best criteria for fitness analysis and is being given considerably greater weight in studies examining fitness levels in athletes and others who want to keep up high physical fitness. Muscle, bone, and fat are three of the body's main structural components that may be quantified by body composition analysis, according to Brozek [3]. The athlete who is eager to maintain the highest degree of physical fitness may be "over fat" even though they do not appear to be "overweight," as a sports physiotherapist it is vital to understand. Lack of exercise and individual variances in physical features may be to blame for this. By using body composition analysis as the best possible instrument for evaluation, sports physical therapy may help athletes maintain outstanding physical condition and improve their performance. Studies on body composition are particularly crucial in medicine since it is well known that having too much body fat puts one at risk for a variety of illnesses and impairments. According to Simopoulos in 1987, there is a curvilinear association between obesity and health risk [4].

As a result of increased mechanical work, decreased heart function is one of the particular health hazards associated with obesity. Multiple

forms of cancer, Alexander et al. [5] huge psychological burden [6], smoking, raised blood lipids, and hypertension [7], monthly abnormalities [4], menstrual irregularities, large psychological burden [6], and others have also been proven. The significance of physical attributes and physical activity in analyses of body composition and fitness A person's whole growth, mentality, and worldview have all been greatly influenced by their physical traits. Over time, the physical specifications have been standardized to meet certain standards of excellence. Physical traits have recently helped the person not only improve his body image for a more immaculate view but have also significantly helped the individual achieve professional achievement. The physical traits that help a guy appear and feel more physically fit and healthy, on the other hand, are maintained in large part by physical exercise, according to Abe et al [8]. Height, weight, age, sex, body type, and degrees of heavy, moderate, and light physical activity are all ideal combinations that offer a person the perfect body composition, which is helpful for obtaining an exceptional level of physical fitness. According to Choing et al. (1990) [9], a high percentage of fat reduces performance in many physical activities because fat does not add to the musculoskeletal system's ability to produce force. According to Wilmore JH & Behnke AR, a person's potential for physical performance is generally higher for tasks requiring strength, muscular endurance, and power the lower their body fat percentage [1,2]. Therefore, the primary goal of the study is to identify the most important aspects of body composition, physical attributes, and physical activity that determine whether a person is physically fit or not. Determine the values for different body composition characteristics in overweight, underweight, normal weight, slightly overweight, and excessively underweight boys

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and girls, among other study objectives.

Literature review

When 42 female participants between the ages of 19 and 24 were examined for the distribution of body fat in response to habitual exercise, found no appreciable changes. The highly active participants, on the other hand, had larger body densities, which was accounted for by variations in the composition of fat-free mass caused by varying degrees of habitual exercise. Females who were obese had lower levels of physical activity, whereas normal and lean females had high levels of physical activity.

In a study of subcutaneous fat distribution in boys and girls aged 1-39 years, discovered very low intersite communalities throughout the prepubertal years, pointing to a tendency for each sex to experience significant site-to-site variation during this time. High communalities show that the thickness of subcutaneous fat at any location is significantly correlated with thickness at all other sites during the period just before puberty and throughout adolescence. Only women experience this greater degree of variance throughout middle age, suggesting that more changes in their subcutaneous fat occur that differentially influence different portions of the body.

Conway (1984) conducted research on a method for estimating the infrared interactance of body composition. This study describes the initial investigation into body composition analysis utilizing Near-IR technology. Using a \$100,000 computerized spectrophotometer; this study determined the mathematical formulas and wavelengths needed to carry out precise assessments of body composition.

The energy requirements for human weight maintenance, as well as the impact of body size and composition, were investigated by Forbes and Brown. By calculating the amount of food required to maintain body weight in a controlled setting, the energy need was approximated. It was shown that the amount of energy needed to maintain weight was inversely related to body weight (r=0.92). Due to their higher levels of body fat, obese people have higher energy needs, which collectively account for 8% of the variation.

By contrasting the effectiveness of the body-mass index, weight adjusted for body-height, and a body-diameter, W/(H2DP), in predicting body fatness, Rookus et al. (1984) evaluated the effects of frame-size categories in weight-height tables [10]. 95 males and 70 women, aged between 23 and 35, had their body weight, height, six body diameters, and four skin fold thicknesses measured. The diversity in body fatness was increased by include body diameter. Without regard to body mass index, the study revealed that women had more body fat than men.

The properties of non-destructive near-infrared instruments were observed by Rosenthal (1986). He uses the food business as an example to explain the fundamental ideas behind employing near-infrared technology to do quantitative assessments. This article serves as a fundamental reference guide for people who want to learn more about near-infrared quantitative analysis.

Adiposity and frame size were identified by Glauber in their study of body weight vs. body fat distribution as determinants of bone density. 6705 older women who were taking part in the research of osteoporotic fractures had their height, weight, hip-waist ratio, elbow width, adiposity, and BMD assessed. Bioelectric impedance was used to determine adiposity, while single-photon and dual energy X-ray absorptiometry was used to assess BMD. Particularly in weightbearing areas, a substantial portion of the effect of weight on BMD was explained by adiposity (36-62 percent). On the other hand, weight accounted for almost all of the variation in adiposity's effect on BMD in weight-bearing locations. Overweight and over fat are not the same thing since not all overweight people are also overfat. They also came to the conclusion that both overweight males and girls had larger frames than their leaner counterparts.

Discussion

An important foundation for creating an intelligent programme of complete fitness is a precise assessment of body composition. Because it is now generally known that being overweight and being too fat are not the same thing, the often used standard age, height, and weight tables are of little utility in judging physique [1,2]. In the current study, the body composition of people with different physical attributes and degrees of physical activity was compared to that of people with different body weights and activity levels [11]. It was discovered that overweight people were categorized as having a dangerous health status due to their extra fat mass (28.45), higher BMI, and lower levels of physical activity.

Conclusion

It can be concluded that an individual's degree of physical fitness relies on both his or her physical make-up and the amount of exercise they get. With a focus on physical attributes and physical activity, body composition may be thought of as the optimal metric for assessing physical fitness. Individuals were divided into five groups based on their body composition and fitness levels: those with very risky health status (overweight) [unfit], those with risky health status (abnormally underweight) [unfit], those with good health status (underweight) [unfit], those with fair health status (slightly overweight) [unfit], and those with excellent health status (Normal weight) [Fit]. The method in which a person balances his physical traits, physical activity, and body composition entirely determines how physically fit he or she will remain. The three have the ideal combination of bodies, as can be observed. The method in which a person balances his physical traits, physical activity, and body composition entirely determines how physically fit he or she will remain. The optimum benchmark for obtaining the optimal body composition and ideal physical fitness for an individual" is the combination of all three that is found in people of normal weight. As a result, it is true to say that "anything in excess or too little can be dangerous. A person who wants to maintain an optimum body composition cannot achieve his or her desired level of superb physical fitness without the appropriate and proportionate mix of physical attributes and physical activity.

Acknowledgement

Not applicable.

Conflict of Interest

None to declare.

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