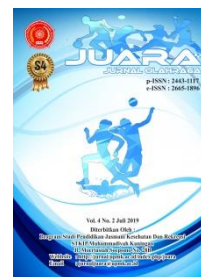




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Body Composition in Various Age Groups Among Individual and Team Sport

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Abstract

The study aimed to compare the Body Composition in Various Age Groups among Individual and Team Sport. A total of one hundred twenty (120) subjects, comprising 60 Individual and 60 Team sport of district Kulgam J&K, further out of 60 individual sports players 20 players were of the age group between 20-25, (20) players were of the age group between 25- 30 and 20 players were of the age group between 30-35. The same procedure was followed for 60 team sports players. The Subjects were selected by using purposive sampling. The age of the subjects ranged between 20-25, the second group 25-30, and the third group 30-35. To analyze and compare the Body Composition and fat percentage in three different age groups among individual sports and team sports, the Following equipment and test were used: the data related to Fat Percentage was measured by Skinfold Calipers. BMI: it was estimated by Stadiometer and weighing machine. The data that was collected after applying standard testing kits were written in separate columns and was cross-checked for all three different age groups. Individual and team sports of district kulgam. Then the analysis of data was carried out by applying various statistical techniques like average., standard deviation and through the application of formula of t-test to find out the significant difference of all selected physical variables I,e BMI and fat percentage in various age groups among individual and team sports players of kulgam district the level of significance as per norm was kept as ($p < 0.05$). the mean and standard deviation of BMI in 20-25 age group individual game players is (22.02 ± 2.20) respectively, and the mean and standard deviation of BMI in 20-25 age group of team sports players is (18.01 ± 1.81), with an average difference of 4.01.). Hence individual sports players were found with a higher BMI than team sports players under the 20-25 age group. BMI in the 25-30 age group individual game players is (23.09 ± 1.76) respectively, and the mean and standard deviation of BMI in 25-30 age group of team sports players is (20.07 ± 3.36), with an average difference of 3.02.). Hence under this age group, the individual sports players were found with a higher BMI than team sports groups. The mean and standard deviation of BMI in 30-35 age group individual game players is (19.30 ± 2.07) respectively, and the mean and standard deviation of BMI in 30-35 age group of team sports players is (22.17 ± 3.47), with an average difference of 2.87. Hence, team sports players were found with a higher BMI under the age group than individual sports players. The

mean and standard deviation of fat percentage in 20-25 age group individual game players is (11.09±4.83) respectively, and the mean and standard deviation of fat percentage in 20-25 age group of team sports players is (9.02±4.18), with an average difference of 2.17.). Hence under this age group, individual sports players were found fatty as compared to team sports players. The mean and standard deviation of fat percentage in 25-30 age group individual game players is (10.01±3.53) respectively, and the mean and standard deviation of BMI in 25-30 age group of team sports players is (14.04±7.48), with an average difference of 4.13.). Hence under this age group, team sports players were found fatty as compared to individual sports players. The mean and standard deviation of BMI in 30-35 age group individual game players is (14.08±2.81) respectively, and the mean and standard deviation of fat percentage in 30-35 age group of team sports players is (18.01±5.64), with an average difference of 3.64. Hence under this age group, team sports players were found fatty as compared to individual sports players

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INTRODUCTION

Ackland (2012) conducted the study on "Current Status of Body Composition Assessment in Sport." The purpose of the survey quantifying human body composition has played an essential role in monitoring all-athlete performance and training regimens. Still, especially so in gravitational, weight class, and aesthetic sports wherein the body's tissue composition profoundly affects performance or adjudication. Babcock (2006) conducted the study on "A comparison of military circumference equations to skinfold-based equations to estimate body composition." The purpose of the study was that Circumference-based military equations (CBEs) were compared with a skinfold-based equation (SBE) to estimate body fat. Kagawa (1998) surveyed "Comparison of body fat estimation using waist: height ratio using

different 'waist' measurements in Australian adults." The objective of the present study was to determine differences in predicting total and regional adiposity using the waist: height ratio (WHtR) calculated using different 'waist' measurements. Silawat (2009) conducted the study on "Comparative Study of Impact of Age on Physiological Variables, Body Composition and Blood Cholesterol in Selected Physical Education Professionals." Gurruci (1998) conducted the study on "Relationship between body fat and body mass index: differences between Indonesians and Dutch Caucasians." To study the relationship between percent body fat and body mass index (BMI) in two different ethnic groups (Indonesians and Caucasians) to evaluate the validity of the BMI cut-off points for obesity. Cross-sectional study.

In physical fitness, body composition describes the percentages of fat, bone, and muscle in human bodies. Two people of equal height and body weight may look completely different because they have different body compositions. The human body is composed of many significant components at the cellular and tissue levels. These include water, minerals, protein, and fat. Increases in the ranks of fat features are detrimental to health and also sports performance. The mineral components are mainly associated with bone. The assessment of body composition is not only joint in sport and exercise sciences but also medicine. The human body is made up of about 50 elements at the atomic level, of which 98% is due to a combination of carbon, oxygen, nitrogen, hydrogen, calcium, and phosphorus. The body is essentially made up of the chemical compounds water, carbohydrates, protein, fat, and minerals at the molecular level. These are organized into cells that are the basis of tissues and organs. The relative amounts of fatty tissue, muscle, and bone are essential for health and sports performance. As a result of methods of body composition analysis have been categorized into fat mass and fat-free mass.

The body fat percentage of a human or other living being is the total mass of fat divided by total body mass; 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 more significant than that for men; due to the

demands of childbearing and other hormonal functions. The rate of critical fat is 3–5% in men and 8–12% in women (referenced through NASM). Storage body fat consists of fat accumulation in adipose tissue, which protects internal organs in the chest and abdomen. The minimum recommended total body fat percentage exceeds the essential fat percentage value reported above. Several methods are available for determining body fat percentages, such as measurement with calipers or bioelectrical impedance analysis.

The body mass index is a statistical measurement derived from your height and weight. Although it is considered a helpful way to estimate healthy body weight, it does not measure body fat percentage. The BMI measurement can sometimes be misleading. A muscleman may have a high BMI but have much less fat than an unfit person whose BMI is lower. However, in general, the BMI measurement can be a valuable indicator for the 'average person.

The BMI equation (BMI = Body Mass Index) was initially framed by Adolph Quetelet, a Belgium mathematician, and scientist, between 1830 and 1850. Adolph was the first person to think of relating weight to height in a statistical, expressible manner. While the BMI tool is pretty reliable, physicians use only one tool in evaluating a person's health status. It is essential to take other blood pressure, cardiac health, physical inactivity, and abdominal circumference. Also, keep in mind that BMI does not

distinguish between muscles mass and fat mass.

A particularly athletic person whose weight is higher due to muscle may have a BMI that indicates that they are overweight when their weight is higher due to muscle mass. We can find out the BMI by using the formula: $BMI = \frac{WEIGHT}{(height)^2}$ (in kilograms).

METHODS

One hundred twenty subjects were selected to collect data, including 60 Individuals and 60 team sports of district Kulgam J&K. The subjects were determined by purposive sampling method. The age of the issues ranged between 20-25, the second group 25-30, and the third group 30-35. Equipment used for collection of data, the data for Body Composition was measured by skinfold caliper, Stadiometer, and weighing machine. After that, collected data was put in Microsoft excel to develop a master chart, and then the 'F' test was used for this statistical treatment.

Following equipment and test were used to collect data, Fat Percentage was measured by Skinfold Calipers (thigh and chest skin was measured). B.M.I (Body Mass Index) was measured by Stadiometer and weighing machine.

FINDINGS AND DISCUSSION

The data collected from One hundred twenty subjects were selected for data collection, including 60 Individual and 60 Team sport of district Kulgam J&K. The subjects were determined by purposive sampling method. The age of the issues ranged between 20-25, the second group 25-30 and the third group 30-35 (BMI, skinfold measurement) and after that, the collected data was analyzed by comparing the means of individual and team sport and was again statistically analyzed by applying 't' to check the significant difference among selected variables. Therefore separate tables and graphs have been presented for each variable. Each table gives the mean of Individual and 60 Team sport of district Kulgam J&K .Also, the researcher found the SD of the above-said age groups, and their mean difference is also given in the table. The level of significance for the present study is kept at a 0.05 level of energy. The degree of freedom is also be kept in mind for calculating tabulated 't', which is then compared with the calculated 't'. This is used for testing of hypothesis, which was given by the researcher previously.

Table 1 Showing Comparison of BMI In Various Age Groups Among Individual And Team Sport

Age Groups	Sport Groups	Mean	S.D.	Mean Difference	D.F	O.T	T.T
20-25 Age Group	Individual sport	22.02	2.20	4.01	38	3.81	2.02
	Team Sport	18.01	1.81				

25-30 Age Group	Individual Sport	23.09	1.76	3.02	38	2.25	2.02
	Team Sport	20.07	3.36				
30-35 Age Group	Individual Sport	19.30	2.07	2.87	38	2.97	2.02
	Team Sport	22.17	3.47				

Graph 1 Graphical Representation of Mean of BMI In Various Age Groups Among Individual And Team Sport

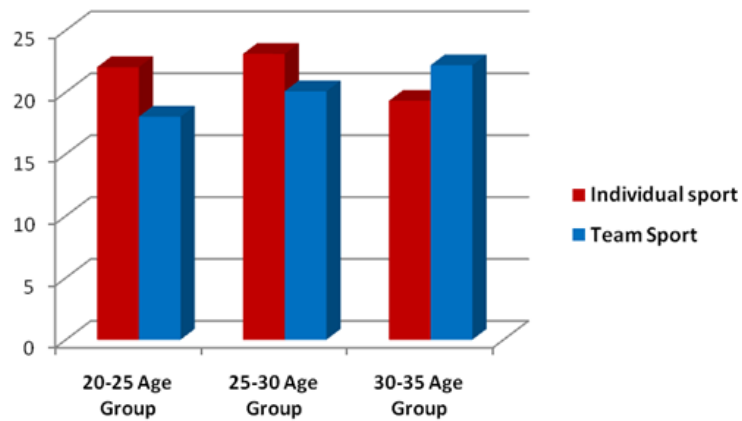
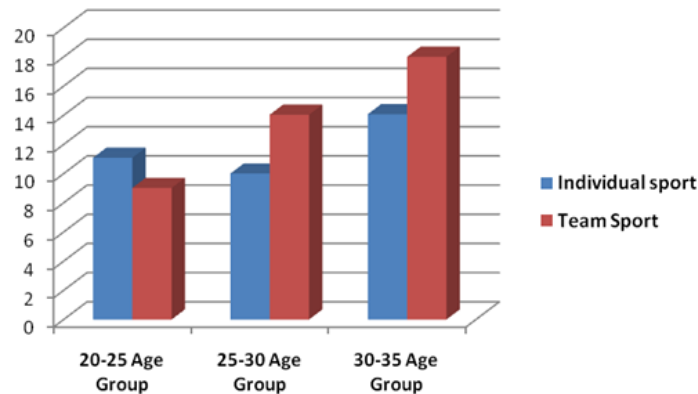


Table 2 Showing Comparison of Fat Percentage In Various Age Groups Among Individual And Team Sport

Age Groups	Sport Groups	Mean	S.D.	Mean Difference	D.F	O.T	T.T
20-25 Age Group	Individual sport	11.09	4.83	2.17	38	2.52	2.02
	Team Sport	9.02	4.18				
25-30 Age Group	Individual Sport	10.01	3.53	4.13	38	2.23	2.02
	Team Sport	14.04	7.48				
30-35 Age Group	Individual Sport	14.08	2.81	3.64	38	2.58	2.02
	Team Sport	18.01	5.64				

Graph-2 Graphical Representation of Mean of Fat Percentage In Various Age Groups Among Individual And Team Sport



CONCLUSION

Based on the result drawn with the mentioned methodology, the following conclusion was drawn out.

There was a significant difference in body composition as BMI and fat Among Individual And Team Sport under three age groups, I 20-25, II 25-30, III 30-35. The study showed a significant difference among the mean of selected groups' items because the calculated t exceeds tabulated t in all age groups. The conclusion of this research work may inform individual and Team sports players about physical and physiological parameters while performing any physical activity. Hence the researcher's hypothesis has been accepted.

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