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Evaluation Of Body Composition Between Basketball And Handball Male Interuniversity Players.

Singh S[1*†]

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[1*†] Satveer Singh, Research Scholar, Department of Physical Education, Punjabi University, Patiala, Punjab, India.

The purpose of present study was to compare the Body Density and Percentage Body Fat between Basketball and Handball male interuniversity male players. For this study, Total 40 male subjects (20 Basketball and 20 Handball) belong to 18-27 years of age range was taken. The study was conducted on players of Punjabi university Patiala and M.P.S.P.S University Patiala. All the samples were taken by applying purposive sampling technique. After being informed of the study's purpose and protocol, each subject willingly agreed to participate in the trial by providing their informed consent. The level of significance was set at 0.05. The t- value of Body density is (12.96), % body fat is (2.0758) at 0.05 level and degree of freedom is set at 38. The results show that there is significant difference of body density and percentage body fat between the Basketball and Handball Players.

Keywords: Body Density, Percentage Body Fat, Biceps, skin fold, Triceps skin fold, Sub scapular muscle, Suprailiac skinfold

Corresponding Author

Satveer Singh, Research Scholar, Department of Physical Education, Punjabi University, Patiala, Punjab, India.

Email: 7veersingh0001@gmail.com

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INTRODUCTION: When it comes to body size, body composition, which is mostly established by genetic inheritance, can be minimally changed. It may also alter dramatically in response to dietary changes and the presence of a particular exercise regimen. In both medical and sporting professions, figuring out one's body composition is a standard practise. There is a lot of interest in innovative techniques and contemporary ways for calculating body composition. Due to the examination of health condition and evaluation of potential health risks, the amount of fat component is frequently the focus of attention. Exercise has a positive impact on both physical appearance and composition. Physiological load, which includes the effects of physical exercise or sports, is thought to be a component that can affect a person's stature. The morphology of the body, where specific body types correspond to specific sports, is the first thing that spectators notice when comparing athletes from different sports. As a result, today's athletes' constitutions and body types are primarily viewed as a necessary condition and an integral component of the structure of factors that are relevant to athletic performance. One of the components of the physiological profile is the quantification of human body composition, which holds a significant position in the sports population due to its significance in tracking all training and performance goals. Otherwise, major changes in body composition occur during growth and maturation. Boys are twice as likely as females to be fatless during adolescence, while girls are twice as likely to gain weight. Additionally, it is of particular importance to the health community to comprehend the body composition as a whole, including all the variables that might affect the structure of the body, as well as to become familiar with all the health formula. The authors' average values for the body composition measures in junior handball players demonstrate that the handball training programme has an identical effect on these parameters regardless of the sport, competition level, etc. Massive bodily height, together with other essential traits, will give a distinct edge in succeeding in that discipline in some sports (basketball). Similar to how persons of medium height and weight will benefit from undertaking tasks that call for good explosiveness and agility, such as in handball, is that they will succeed more often. The primary objectives of the study are to ascertain the average body composition of athletes

And to ascertain the differences in body composition of athletes competing in various sports, in this case basketball and handball. ***(Joksimovic K , et al .2021)***

It's important to have some body fat for overall health. It is crucial for maintaining hormone balance, supplying energy, and safeguarding internal organs. A higher risk of conditions including cancer, diabetes, and heart disease is associated with having too much body fat.

OBJECTIVE OF THE STUDY

Evaluation of Body Composition between basketball & handball male Interuniversity Players.

MATERIALS AND METHODS

Design of the study:

The procedure adopted for sampling, tool used, selection of variables, instruments reliability' administration of the test, collection of the data and description of the various test items and statically techniques used for analysing the data have been discussed.

Sample:

The present study is conducted on 20 male Basketball and 20 male Handball players in the age group of 18 to 27 years who have participated in Inter University Competition session 2022-2023.

Tool Used:

- The weight of the subjects was measured by the help of portable electronic weighing machine.
- The height of the subject's was measured by the help of Anthropometric Rod.
- The skinfold calliper was used to measure various skin folds.
- Sketch pen was used to mark the measuring area of the muscles of the subject.

Selection of Variables:

01. **1. Body density**

1.1631-0.0632 x log (Biceps+Triceps+ Sub Scapulr +Suprailiac)

Where x = sum of four skin fold in millimetre converted in logarithms.

(Siri-1956-61) equation has been applied to determine body fat percentage

02. **Percentage Body Fat**

The calculated body density is converted into percent body fat using the formula devised by Siri (1961)

Percentage fat (4.95/body density - 4.50) x 100

Statistical Procedure:

Students **'t'test** will be applied to assess the differences between groups.

Estimation of Body Compositions:-

The four skin fold measurement was used for the estimation of body density.

01. Biceps

02. Triceps

03. Sub scapulr

04. Suprailiac

The higher an object's density, the higher it's mass per unit of volume. The average density of an object equals its total mass divided by its total volume.

Durninand **Womersley (1974)** equation has been used to determine the body density.

Body density

TABLE-1 BODY DENSITY

GROUP	N	MEAN	STANDARDDEVIATION	STANDERDERROR OFMEAN	t-VALUE
BASKETBALL	20	1.085	0.0089	0.0019	12.92
HANDBALL	20	1.048	0.0089	0.0020	

Level of Significance0.05 df=38

Tabulated t-value at 0.05(1.697)

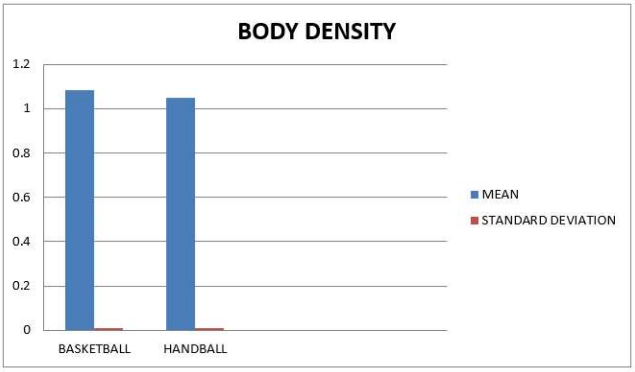

FIGURE: I BODY DENSITY.

Table & Figure I statistically show that the mean and standard deviation with Regard to Basketball players is 1.085 ± 0.0089 where as in case of Handball players is 1.048 ± 0.0089 respectively. The calculated t-value is (12.92). Which is less than the tabulated t-value is (1.697) at 0.05 levels. So, it indicates that there is significant difference Between Basketball and Handball Inter-University level players for their Body Density.

Body Fat Percentage

TABLE-II PERCENTAGE BODY FAT

GROUP	N	MEAN	STANDARDDEVIATION	STANDARDERROR OFMEAN	t-VALUE
BASKETBALL	20	20.40	2.77	0.62	2.0758
HANDBALL	20	22.20	2.71	0.60	

Level of Significance 0.05 df=38

Tabulated t-value at 0.05(1.697)

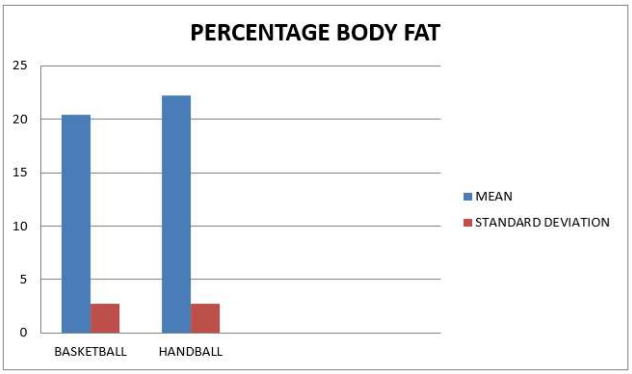

FIGURE-II PERCENTAGE BODY FAT

Table and Figure II statistically show that the mean and standard deviation with regard to Basketball players is 20.40 ± 2.77 where as in case of Handball player's is 22.20 ± 2.71 respectively. The calculated t-value is (2.0758). Which is less than the tabulated t-value is (1.697) at 0.05 levels. So, it indicates that there is significant difference Between Basketball and Handball Inter-University level players for their Percentage Body Fat

RESULT & DISCUSSION

01. **Body density**

The result of the study established that there was significant difference in body density in Basketball and Handball inter university level Players. On the basis of analysis of the data, investigator found that the earlier study of **Bradbury et al (2017)** supported the present study.

01. **Body Fat percentages**

The result of the study established that there was significant difference in fat percentage in Basketball and Handball inter university level Players .On the basis of analysis of the data, investigator found that the earlier study of **Bradbury et al (2017)** supported the present study

CONCLUSION

Within the limits and limitations of the study, it is concluded that, significant differences were found in Body Density and Percentage Body Fat variable between Basketball and Handball inter university level Players.

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