International Journal of Yoga, Physiotherapy and Physical Education
Online ISSN: 2456-5067; Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 2; Issue 3; May 2017; Page No. 04-06

Comparative study of body composition between intercollegiate basketball and handball players

Dr. Anil A Deshmukh

Director of Physical Education & Sports, Indirabai Meghe Mahila Mahavidyalaya, Amravati, Maharashtra, India

Abstract
This study was frame to compare the body composition between intercollegiate basketball and handball players. The researcher selected fifty (50) subjects for this study, twenty five (25) basketball players and twenty five (25) handball inter collegiate players from affiliated colleges of Sant Gadge Baba Amravati University, Amravati. The 50 subjects were selected by the simple random sampling method. The criterion measures to test the hypothesis of the study were below: Percent body fat was selected as criterion variables. Skin fold thicknesses were measured with Skinfold Caliper. A fold involving two layers of skin and subcutaneous structures can be held between the thumb and index finger while the skinfold caliper is being applied. The quantity of stored fat will determine the thickness of the fold. The subjects directly apply to the body skin fold caliper measure the muscles of body. To test the hypothesis, the level of significant was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study. The data collected on 50 subjects was analyzed by Applying 't' test to compare body composition between intercollegiate basketball and handball players. Result: There was no significant difference in abdominal skinfold, chest skinfold, arm skinfold, body density and body fat percentage between basketball and handball players.

Keywords: body composition, intercollegiate, basketball and handball players

Introduction
Body composition, fat, fat-free mass and lean body tissue or body refers to the relative amounts Fat and fat-free weight. The weight can only be divided into two components. Per cent of the total weight of body fat, fat weight is represented by an index of a person's preference used to evaluate body composition. Obesity is defined as an excessive accumulation of fat weight. Men have good levels of body fat is 25% and the percentage of body fat than the body fat percentage is 15% or less, when they are considered obese. Women have 23% or less of the good level of body fat, and body fat percentage of 33% or higher are considered obese in there. For body composition measurements interest in sports performance and health largely in its relations with both, is a huge increase over the last 20 years. Elite players, a person looking to reach or maintain optimal body weight, and hospital patients have benefited from the increase in popularity and accurate measurement of body composition.

Methodology
Source of Data
For the present study the researcher selected the male subjects from affiliated colleges of Sant Gadge Baba Amravati University, Amravati taken as sources of data.

Selection of Subject
The researcher selected fifty (50) subjects for this study, twenty five (25) basketball players and twenty five (25) handball inter collegiate players from affiliated colleges of Sant Gadge Baba Amravati University, Amravati.

Sampling method
The 50 subjects were selected by the simple random sampling method.

Criterion measures
The criterion measures to test the hypothesis of the study were below:
Percent body fat was selected as criterion variables. Skin fold thicknesses were measured with Skinfold Caliper.

Procedure
A fold involving two layers of skin and subcutaneous structures can be held between the thumb and index finger while the skinfold caliper is being applied. The quantity of stored fat will determine the thickness of the fold. The subjects directly apply to the body skin fold caliper measure the muscles of body.

Formula
- **Abdomen Skin fold:** At the midaxillary line at waist level.
- **Chest Skin fold:** At the level of the xiphoid in the midaxillary line.
- **Arm Skin fold:** At the midposterior, midpoiunt between the tip of the acromion and the tip of the olecranon with the arm hanging at the side.

Body Density
= 1.1017- (0.000282) X (A) – (0.000736) X (B) – (0.000883) X (C)

Where (A) = Abdominal Skinfold
(B) = Chest Skinfold
(C) = Arm Skinfold

Percent Body Fat $= \left(\frac{4.570}{\text{Body Density}} - 4.142\right) \text{ X } 100$

Statistical analysis
Finding
To test the hypothesis, the level of significant was set at 0.05 level of confidence which was considered adequate and

reliable for the purpose of this study. The data collected on 50 subjects was analyzed by Applying‘t’ test to compare body composition between intercollegiate basketball and handball players.

Table-1: Showing comparison between basketball and handball players in body composition

Variable	Group	Mean	SD	SE	MD	Ot	df	Tt
Abdominal Skinfold	Basketball	20.208	2.608	0.868	1.029	1.186	48	2.01
	Handball	19.179	3.469					
Chest Skinfold	Basketball	14.363	4.358	1.048	1.254	1.196	48	2.01
	Handball	13.108	2.915					
Arm Skinfold	Basketball	10.954	2.564	0.671	0.938	1.397	48	2.01
	Handball	10.017	2.163					
Body Density	Basketball	1.076	0.004	0.001	0.002	1.795	48	2.01
	Handball	1.078	0.004					
Body Fat	Basketball	10.624	1.774	0.450	0.807	1.794	48	2.01
	Handball	9.817	1.384					

*Significant at 0.05 level of confidence Tabulated‘t’ 0.05 (48) = 2.01

Table-1 reveals that there is insignificant difference in abdominal skinfold between basketball and handball players. The obtained t-value of 1.186 is less than the table value of 2.01.

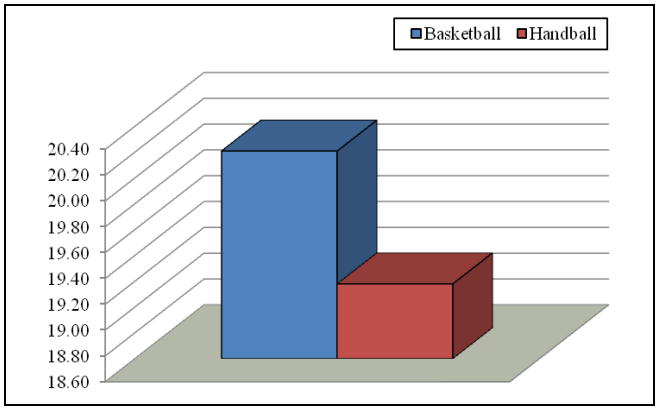

Fig 1: The Mean Values of abdominal skinfold between basketball and handball players

Table-1 reveals that there is insignificant difference in chest skinfold between basketball and handball players. The obtained t-value of 1.196 is less than the table value of 2.01.

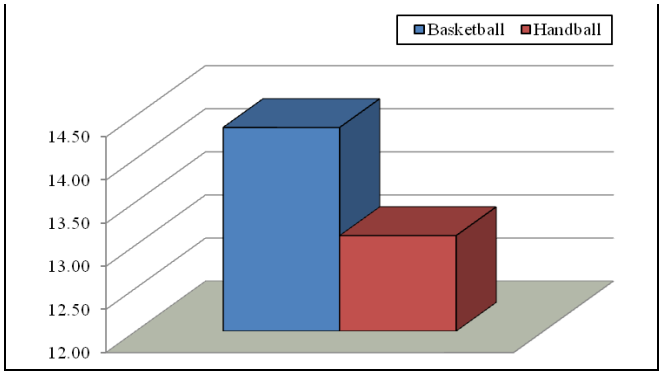

Fig 2: The Mean Values of chest skinfold between basketball and handball players

Table-1 reveals that there is insignificant difference in arm skinfold between basketball and handball players. The obtained t-value of 1.397 is less than the table value of 2.01.

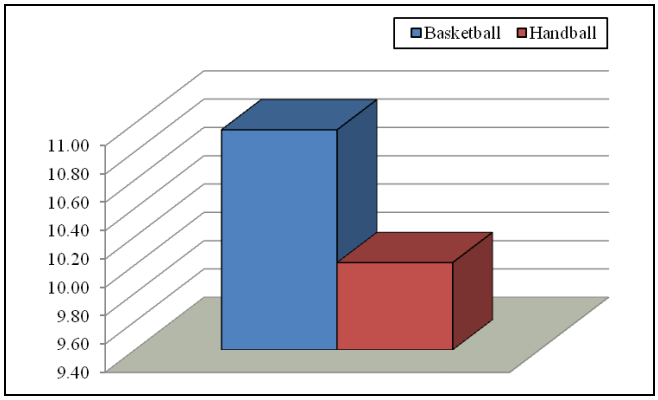

Fig 3: The Mean Values of arm skinfold between basketball and handball players

Table-1 reveals that there is insignificant difference in body density between basketball and handball players. The obtained t-value of 1.795 is less than the table value of 2.01.

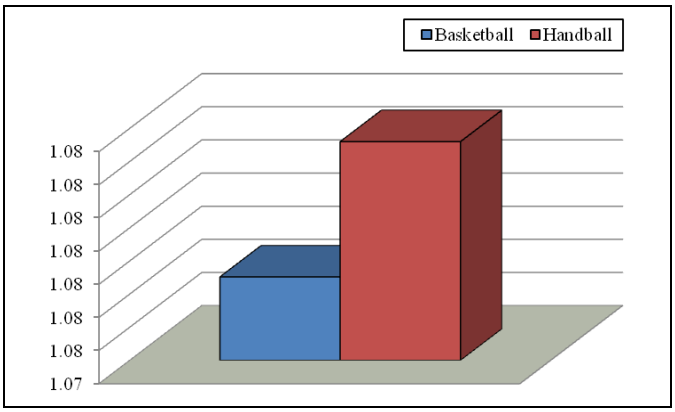

Fig 4: The Mean Values of body density between basketball and handball players

Table-1 reveals that there is insignificant difference in body fat between basketball and handball players. The obtained t-value of 1.794 is less than the table value of 2.01.

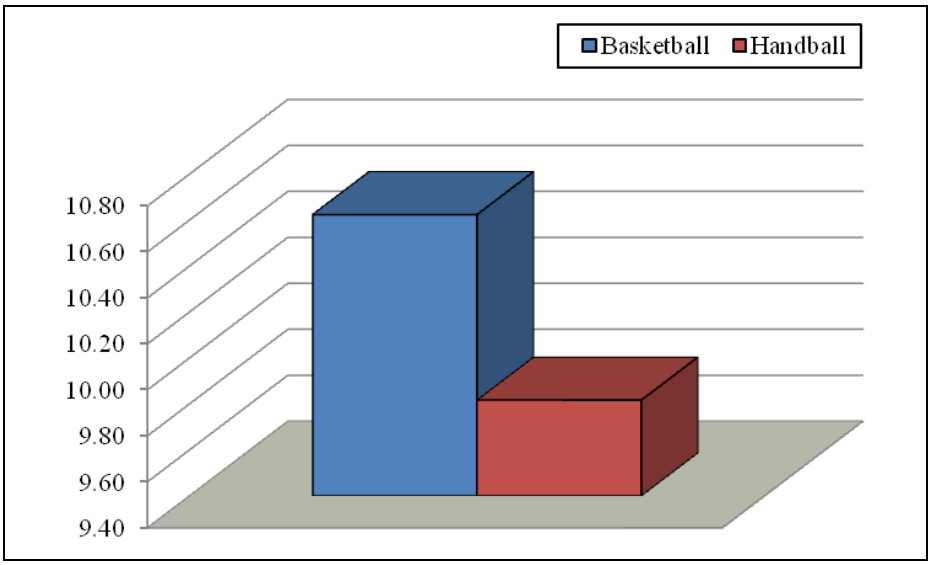

Fig 5: The Mean Values of body fat between basketball and handball players

Discussion

In physical fitness, body composition is used to describe fat, bone and muscle percentage of the human body. For muscular tissue takes less space than fat tissue on your body, your body composition, as well as our weight, determines one. Different body structure, because two people of the same height and the same body weight may look completely different from each other. National Institute of Health recommends a healthy adult male body is required to be between 13 and 17 percent fat. Significant extent on the level of excess body fat may indicate. Player, leaner body, and the body is more muscular body fat percentage of less than a level. In general, most of the players and 7 percent of men and 19 per cent between 10 and 25 women experience greater performance gains in body fat percentage, depending on the sport.

Conclusion

On the basis of the result drawn with the mentioned methodology the following conclusion were soughed out.

There was no significant difference in abdominal skinfold, chest skinfold, arm skinfold, body density and body fat percentage between basketball and handball players.

References

1. Ramajayam M. Analysis of Body Composition among Karnataka State Adolescent School Boys. International Journal of Health, Sports and Physical Education. 2013; 2(1):21-24.
2. http://en.wikipedia.org/wiki/Fat.
3. Maclaren D, *et al.* Sports and Exercise Physiology. New York: Bios Scientific Publishers. 2007, 178-179.
4. Nikolova M, Akabaliev V, Sivkov S, Mladenova S. Body Composition Of Children And Adolescents From Plovdiv. 2005, 150-158.
5. Bhavani A, Gopinath V. Comparison of the Body Composition among School Boys at the Age of 13 To 15 Years of Tamilnadu. JOPES. 2010; 2:7-11.
6. Gutin, Michael RJS. Effect of Exercise Intensity on Cardio Vascular Fitness, Total Body Composition and Visceral Adiposity of Obese Adolescents. Am J Clin Nutr. 2002; 75:818-826.