



ISSN: 2456-0057
IJPNPE 2018; 3(1): 1800-1801
© 2018 IJPNPE
www.journalofsports.com
Received: 15-11-2017
Accepted: 16-12-2017

Amit Tomar
Research Scholar University of
Delhi, New Delhi, India

Dr. Dharmendra S Narwaria
JNKVV Sports Officer,
Jabalpur, Madhya Pradesh,
India

Comparative study of body composition parameters between handball and basketball players at the university level

Amit Tomar and Dr. Dharmendra S Narwaria

Abstract

The aim of this study was primarily to investigate the body composition parameter in handball players and basketball university players of LNIPE Gwalior. 15 handball and 15 basketball players have taken in this study. The body composition analyser machine (bioelectrical impedance analyser) measures weight, BMI (body mass index), FFM (fat free mass), metabolic age, BMR (basic metabolism rate), TBW (Total bone weight) and visceral fat rating. for the analysis of data independent “t” test was employed with level of significance 0.05. the result of study shown insignificant difference in weight, BMI, FFM, metabolic age, BMR, TBW and visceral fat rating. However in case of height, significant difference was found between handball players and basketball players.

Keywords: Body composition, handball player and basketball, BMI, FFM metabolic age and BMR

Introduction

Handball and basketball player have different type body structure they have lean and thin body mass according to other game like football and rugby player. I want to investigation to body composition. Body composition is defined as the proportion of fat, muscle, and bone in the body. It is usually given as a ratio of lean mass to fatty mass. The body is consist of water, protein, minerals, and fat. A two-component model of body composition divides the body into a fat component and fat-free component. Body fat is the most variable constituent of the body. The total amount of body fat consists of essential fat and storage fat. Fat in the marrow of bones, in the heart, lungs, liver, spleen, kidneys, intestines, muscles, and lipid-rich tissues throughout the central nervous system is called essential fat, whereas fat that accumulates in adipose tissue is called storage fat. Essential fat is necessary for normal bodily functioning. The essential fat of women is higher than that of men because it includes sex-characteristic fat related to child-bearing. Storage fat is located around internal organs (internal storage fat) and directly beneath the skin (subcutaneous storage fat). It provides bodily protection and serves as an insulator to conserve body heat. The relationship between subcutaneous fat and internal fat may not be the same for all individuals and may fluctuate during the life cycle.

Lean body mass represents the weight of your muscles, bones, ligaments, tendons, and internal fat-free mass. Practical methods of assessing body composition such as skin folds, bioelectrical impedance analysis (BIA), and hydrostatic weighing are based on the two-component (fat and fat-free mass) model of body composition and organs Lean body mass differs from fat-free mass. Since there is some essential fat in the marrow of your bones and internal organs, the lean body mass includes a small percentage of essential fat. However, with the two-component model of body composition, these sources of essential fat are estimated and subtract fat-free mass. Practical methods of assessing body composition such as skin folds, bioelectrical impedance analysis (BIA), and hydrostatic weighing are based on the two-component (fat and fat-free mass) model of body composition and organs Lean body mass differs from fat-free mass. Since there is some essential fat in the marrow of your bones and internal organs, the lean body mass includes a small percentage of essential fat. However, with the two-component model of body composition, these sources of essential fat are estimated and subtracted from total body weight.

Correspondence

Amit Tomar
Research Scholar University of
Delhi, New Delhi, India

Objectives of the Study

To study the body composition of handball and basketball players.

To study the BMR and Total body water % of the handball and basketball players.

Methods

Subject

The present study was conducted on 24 young male subjects (handball =12 and basketball = of age group 18-24 years. Subjects are selected from Lakshmbai National University of Physical Education Gwalior, Madhya Pradesh.

Variable

Fat free mass, BMI (body mass index), BMR (basal metabolic

rate), TBW, (total body water), degree of obesity and visceral fat rating.

Measurement

All the variable measure by the body composition analyser machine (bioelectrical impedance analyser).

Statistical Analysis

Values are presented as mean values and SD. Independent samples" t "tests were used to test if population means estimated by two independent samples differed significantly. The obtained "t" ratio was tested for significance at 0.05 level. The data was analyzed using SPSS Version 17. The obtained results have been presented in the following table.

Variable	Games	N	Mean	Std. Deviation
BMI	Basketball	12	21.2083	2.01109
	Handball	12	22.6808	2.37057
FFM	Basketball	12	58.2417	4.14520
	Handball	12	57.5417	4.99244
BMR	Basketball	12	1684.2500	124.77407
	Handball	12	1750.9167	160.83671
Metabolic Age	Basketball	12	18.0000	2.00000
	Handball	12	21.1667	5.52405
TBW (%)	Basketball	12	56.4083	1.54123
	Handball	12	54.8750	2.95700
Degree of Obesity (%)	basketball	12	-3.5833	9.15034
	Handball	12	3.0333	11.00788
Visceralfat Rating	Basketball	12	4.2500	2.26134
	Handball	12	6.1667	2.91807

CTable-2

Variable	T	DF	Sig. (2-tailed)
BMI	-1.641	22	.115
FFM	.374	22	.712
BMR	-1.135	22	.269
Metabolic Age	-1.867	22	.075
TBW	1.593	22	.130

Discussion of Findings

It was reported that there is no significant difference found between the basketball and handball players in BMI, FFM, metabolic age, BMR, TBW and visceral fat rating. This might be due to the similar nature of game, thus high level of physical fitness required to perform the various techniques in both the games and it may be occur due to similar kind of training schedule has been followed by the players and may be because of high level of training given to the players while papering for the competitions. Constituents of diet may also be one of the reasons for no differences in the various parameters between the basketball and handball players.

References

1. Apostolidis N. Physiological and technical characteristics of elite young basketball players. *J Sports Med. Phys. Fitness.* 2003; 43:157-163.
2. Dubois D. A formula to estimate approximate body surface area if height and weight be known. *Arch. Int. Med.* 1916; 17:863.
3. Wilmore JH. *Physiology of Sports and Exercise.* 2nded. Human Kinetics, Champaign, 1999, 490.
4. Kansal DK. A study of intrasport differences in physique of Indian University football players. In: JAMES APD (Ed) *Perspectives in kin anthropometry, Human Kinetics*

Publishers, Champaign, 1986.

5. Kansal DKN. Physical status and athletic performance of school boys during adolescent age. *Modern perspective in Physical Education and Sports Science.* Harman Publications, New Delhi, 1986, 65-76.
6. And body composition of selected national athletes. *Mal. J Nutr.* 2:138-147. Sidhu LS, Singh J, Singh SO, Kaur G *Morphological Characteristics of sports boys ranging in age from 11 to 19 years.* *Ind. J Sports. Sci. Phy. Educ.* 1996; 8(1):37-49. Sodhi HS *Effects of physical activity on body composition-Areview.* *NIS J.* 1976, 10:28-33.