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Impact of physiological age on body fat percentage, skeletal muscle and BMR

Mukesh Kumar

Research Scholar at LNIPE Gwalior, Madhya Pradesh, India

Abstract
This study was aimed to see the relationship of physiological age with body fat percentage, skeletal muscle and BMR. For fulfil the purpose of the study the data was collected on 60 samples during all India competition held in lovely professional university, Punjab in the session 2014-15. The samples were select with the help of purposive sampling technique under non-probability sampling technique. The age of the samples is ranges between 17-25 years. The data of the samples is collected with the help of "body composition monitor" with scale HBF- 361 and the data was collected on physiological age, body fat percentage, skeletal muscle and BMR. The SPSS22 version software was used to analyse the data by using statistical technique Pearson correlation. After analyse the data it was found that the relationship of physiological age with all the variable is .882,-.743 and .824 respectively, which is less than 0.05 significant level. Hence the null hypothesis there is no relationship of physiological age with selected variables is rejected and it was concluded that there is significant relationship of physiological age with all the selected variables.

Keywords: physiological age, body fat percentage, skeletal muscle and BMR

1. Introduction
The term Body composition is used to describe the different components which make the weight of the body. Human body is made up of varieties of different tissues i.e. lean tissues, like muscles bones and organs. Therefore human's body composition is the relative proportion of muscle bone & fat tissue. Body composition consists of fluid, micro nutrient and fat. Body composition plays an important role in achieving excellence in sports performance (Mathur and Salokun, 1985) [5]. Composition of athlete's body is almost important factor in the success of a team in all athletic endeavours (Wilmore, 1982) [8].
Literature on body composition reveals out that in specific sports lean athletes were superior in performance due to their well masculine physique as compared to the athletes that were having with extra added mass (Heyward, V. H. 1991) [2]. By the nature of sports body fat is varied in elite athletes. When a men drop under 8% of the body fat and women drop under 14% there is benefits of performance in both of them. Body fat% in body composition is of great interest of athletes and is frequently negatively associated with performance (Gomez, 2004; Sigurbjorn, Evans, Saunders, Obgurn) [1]. Skeletal muscle mass is the mass which attached with bones help to do the movement is known as skeletal muscle mass. A lean athlete contains more skeletal mass than non-athlete. Physiological age is the new concept which represents the age of the internal organs on which they working. This is also one of important factor which affects the performance, so in this study researcher wants to see the association of physiological age with selected variables.

1.1 Objective of the study
To fine out body fat percentage, skeletal muscle, BMR and physiological age of sportspersons.
To find out the relationship between physiological age with body fat percentage, skeletal muscle and BMR.

1.2 Hypothesis
The hypothesis of the study was "there is significant relation between all three variables with physiological age.

1.3 Significance of the study
The study will be helpful to know the relationship between physiological age with body fat percentage, skeletal muscle and BMR.

2. Methodology
A correlation study was design to investigate the relationship of physiological age with body fat percentage, skeletal muscle and BMR of the sportsperson. A total of 50 subjects were selected for the study. Under non-probability sampling the purposive sampling technique was used by the investigator to get the samples from population. The data was collected on elite all India boxing players, during all India university competition of boxing held in lovely professional university 2014-15. For the purpose of data the "Body composition monitor" with scale HBF-361 was used and the data was collected on the selected variables i.e. body fat percentage, skeletal muscle, BMR and physiological age. The age of the subjects is between 17-25 years. The statistical technique, Pearson correlation was used to analyse the raw data of body fat percentage, skeletal muscle and BMR of the sportsperson. The SPSS 22 version software was used to apply the correlation.

2.1 Findings and Interpretations
In the following sections the statistically analysed data

has been presented. Results pertaining the relation between the total body fat, skeletal, RMR and physiological age.

Before applying the parametric there are certain assumptions which are need to be fulfil so for this study all the assumptions are successfully fulfilled. After applying statistical technique the fallowing result is found. Below table no 1 shoes the mean and Std. of all the variables.

Table 1: shows the mean, S.D and SEM.

Descriptive Statistics			
	Mean	Std. Deviation	N
physiological age	24.7800	6.60022	50
body fat percentage	15.5200	4.20117	50
skeletal muscle	36.3022	1.56716	50
BMR	1596.2200	154.50108	50

Table 2: shows the relationship among all selected variables in the study.

Correlations					
		age	**Body fat**	**skletal_msl**	**BMR**
age	Pearson Correlation	1	.830**	-.743**	.824**
	Sig. (2-tailed)		.000	.000	.000
	N	50	50	50	50
bodyfat	Pearson Correlation	.830**	1	-.740**	.717**
	Sig. (2-tailed)	.000		.000	.000
	N	50	50	50	50
skletal msl	Pearson Correlation	-.743**	-.740**	1	-.559**
	Sig. (2-tailed)	.000	.000		.000
	N	50	50	50	50
BMR	Pearson Correlation	.824**	.717**	-.559**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	50	50	50	50

** Correlation is significant at the 0.01 level (2-tailed).

Table no 2 shows the relationship of physiological age with body fat percentage, skeletal muscle and BMR of sportspersons. The result shows that there is significant relationship of physiological age with body fat percentage, skeletal muscle and BMR of sportsperson. The relationship between physiological age with selected variables is .882,-.743 and .824 respectively, the associated p value for all the variables is .000 which is less than 0.05. Hence there is strong relationship of physiological age with all the selected variables.

3. Conclusion

The statistically analysed data shows that all the p value for all the variables is 0.000 which is less than 0.05 hence it is concluded that there is significant and strong relationship of physiological age with body fat percentage, skeletal muscle and BMR of sportsperson.

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