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Comparative analysis of selected body composition variables among elite boxers

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Abstract

The purpose of the present study was to compare the body composition variables among low and high weight category of boxers. A total of 30 male samples of 17-25 years of age were selected from all India competition held in lovely professional university 2014-2015. The purposive sampling technique was used by the researcher to select the samples for the study. Out of 30 samples, the samples were divided into two categories 15 were from low weight category and remaining 15 were from high weight category. The data was collected with the help of "body composition monitor" with scale HBF- 361 on the variable body fat percentage, visceral fat and B.M.I. The data was analysed through the SPSS 20 version, by applying the independent t-test. The hypothesis of the study was "there is significant difference in body composition between low weight and high weight category boxers" against the statical null hypothesis that there is no difference between the groups. After analyse it was clear that the null hypothesis was rejected at 0.05 level of significance and it was concluded that there is significance difference in body composition between low weight and high weight category of boxers.

Keywords: Boxers, body composition, low weight category, high weight category

1. Introduction

With the improvement in sports participation in the recent years, the performance standard has also increased, which led to the sports scientists to think on the various possible ways to further improve the performance. The physical educationists and sports scientists are working hard to develop suitable methods to enhance existing level of performance. There are many reasons for the continuous improvement in performance. The large numbers of young people are coming in contact with systematic coaching for greater and better selection. Boxing is a dynamic sport, which requires high level of physical fitness, technical skill, reaction time, tactical efficiency, strength and speed of movement. It also demands a combination of both aerobic and anaerobic energy metabolism, and especially, enormous reserve amounts of individual anaerobic and aerobic power. (Jako P., 2000 & Rosenbloom C.A., 2000) [1, 3]. Boxing is a combat sports in which two people punch at each other with hands. Boxing now days is very famous in India because this is the game in which Indian players won the medals at all levels of international competition like, Asian games, commonwealth games and most important competition Olympic Games. Success in this highly competitive sport requires exceptional component of physical fitness e.g. speed, strength, eye hand coordination, agility and endurance. These all components are directly dependent on composition of the body (body composition). Composition of athlete's body is most important factor in the success of a team in all athletic endeavors (Wilmore, 1982) [4]. Body composition plays an important role in achieving excellence in sports performance (Mathur and Salokun, 1985) [2]. Body composition consists of fluid, micro nutrient and fat. So for this reason researcher have made attempt to analyze the body composition among boxers of low and high weight category.

2. Methodology

For the purpose of study the data was conducted on 30 elite boxers of 17 to 25 years of age those who were get position in all India University competition held in L.P.U (Punjab) in the session 2014-15. Out of 30 samples 15 were of low weight category remaining 15 were of high weight category.

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Low weight category includes the weight categories from light weight to Walter weight category whereas, high weight category consists the weight categories from Walter to heavy weight categories of the boxing. The data were collected with the help of non-probability sampling technique (purposive sampling method). For the collection of data the “Body composition monitor” scale HBF-361 was used and the data was collected on the selected variables i.e. body fat, visceral fat and B.M.I. The data was analysed with the help SPSS 20 version. Two-sample t-test was applied in SPSS for analysing

the data of low weight and high weight category of boxers.

2.1 Findings and Interpretations of the data

In the following sections the statistically analysed data has been presented

After analysing the raw data through SPSS software the following table is obtained which express the whole picture of the data. The data shoes mean S.D and SEM along with the significant value of Equality of Variances and t-value.

Table 1: Analysis of body composition variables of elite boxers.

variables		N	Mean	Std. Deviation	Std. Error Mean	f-value	P-value	t value	P-value
body fat percentage	Low weight category	15	12.2200	3.87892	1.00153	.017	.899	-7.208	.000
	High weight category	15	21.4733	3.11092	.80324				
visceral fat	Low weight category	15	4.5333	1.45733	.37628	1.454	.238	-5.296	.000
	High weight category	15	7.7333	1.83095	.47275				
B.M.I	Low weight category	15	21.2667	1.53514	.39637	.524	.475	-6.220	.000
	High weight category	15	24.8933	1.65593	.42756				

* Significant at 0.05 level (t=2.048)

The above table shows the mean, standard deviation, SEM and p-values of different selected body composition variables. The statistical analysis of the raw data of elite boxers shows a significant difference in all the variables at 0.05 level of significance. The mean value of low weight category is less than that of high weight category in all variables of body composition selected in the study respectively. Before applying the t-test there are some assumptions which are required to be fulfilled. The first assumption of all parametric tests is the normality of the data. So along with normality of the data another assumption for applying t-test is Levene's Test for Equality of Variances which is needed to be insignificant

for applying the t-test. So both the assumptions are successfully fulfilled, for applying the t-test in the study. The calculated values for all the variables are found significant at the 0.05 level of significant as shown in the above table.1. Thus the null hypothesis is rejected which is “there is no difference in body composition at all between the low weight and high weight category of boxer”. Against the alternate hypothesis, “there would be significant difference in body composition of boxers between low weight and high weight category”. The graphical representation of the data is shown below in the figure 1.

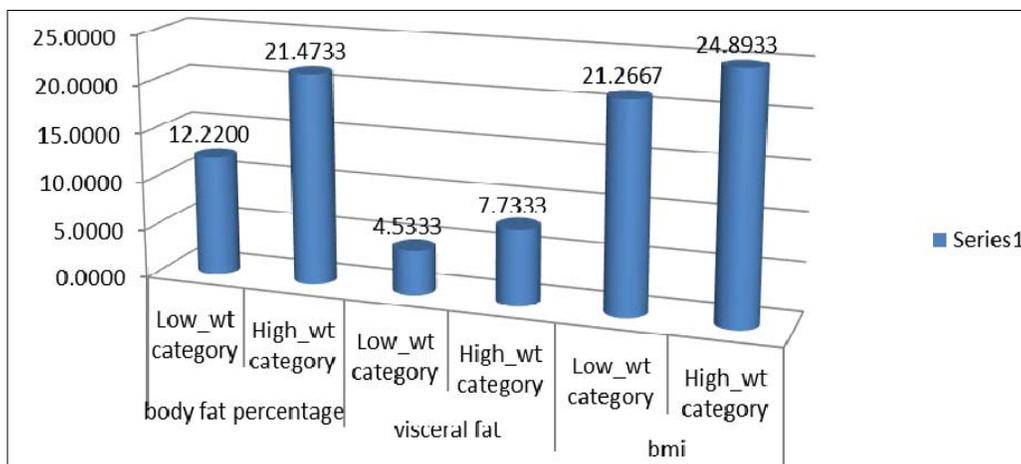


Fig 1: Shows mean values for both the groups of selected body composition variables.

3. Conclusion

The present study was designed to compare the body composition of elite boxers. A significant difference was found in the body composition variables in low weight and high weight category of boxers. So, it can be concluded that the low weight category have low level of body fat percentage, visceral fat and B.M.I with respect to high weight category.

4. Acknowledgments

I pay my tribute to my father and mother for making all those sacrifices that he had for the better future of my life.

5. References

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