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A comparative study of maximum breath holding capacity among players of various sports

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Abstract

The present study has been designed to investigate the maximum breath holding capacity among long distance runners, yoga and swimming games players who participated at inter-university level. For accomplish the study 20 male long distance players, 20 male yoga players and 20 male swimming players were randomly selected as sample. The age of all samples was ranged 18-28 year. Male Sports persons who participate at inter-university level were randomly selected as samples. To accomplish the study maximum breath holding capacity test was used in the study. All samples were selected from the Maharshi Dayanand University Rohtak. The obtained data were analyzed by applying one way analysis of variance. The level of significance was set at 0.05. We observed that there would be no significant difference among Long Distance Runners, Yoga and Swimming games players in their Maximum Breath Holding Capacity.

Keywords: Maximum breath holding capacity, long distance runners, yoga, swimming

Introduction

Although there are many benefits to learning to use all the muscles of breathing, and learning to breathe in various ways, it is the art of breathing less than normal (hypoventilation) in the most advanced steps of yoga, which provide the most physical benefits. The less you breathe, the more carbon dioxide will accumulate inside your body. Contrary to popular belief, organic dioxide and organic acids are converted into your blood, there are many benefits within the body. The best way to get the benefits of building carbon dioxide for beginners is to try to maintain as much activity as possible, breathe in the stomach and perform as many activities as possible. A quick movement is to go for a quick walk and try to keep the breath as natural and comfortable as possible. It will be easy for you to do this if your abdomen is usually allowed to relax and your hips and spinal cord can move more easily like the Olympic Walker. For your most advanced doctors, there are many other things that can increase your carbon dioxide after properly preparing your body.

Most factors of importance in determining the breaking point of respiration have been known for many years. Hill and Flake noted that if oxygen was breathed in advance instead of air, then the breathing time was long. He also noticed that after breathing in Olvision, supernatural PCOS₂ (later known as PCO₂) was more about to break; It was probably due to long-term breathing capture. In the same paper, he said that his subjects can relive the air that ends with a bag up to two or four times, until the maximum breath is not time in the air. Therefore, they showed that pulmonary ventilation allowed this subject to suffer more hypoxia and more hypercapnia than at the point of rupture of respiration. This discovery, now sixty years old, suggests that there are some types of chemical and mechanical stimulation during respiration. Later studies define in more detail the amount of oxygen, CO₂ and lungs [Douglas and Moladen, 1909; Clock and direct, 1959; Maksworthy, 1951]^[4] and the whole subject has been reviewed by Methoffer [1964].

Objectives of the study

To main objective of the study is to compare the Maximum Breath Holding Capacity among Long Distance Runners, Yoga and Swimming games players.

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Hypothesis of the study

There would be no significant difference among Long Distance Runners, Yoga and Swimming games players in their Maximum Breath Holding Capacity.

Research process and methodology

The sample for the present study was 20 male long distance players, 20 male yoga players and 20 male swimming players were randomly selected as sample. The age of all samples was ranged 18-28 year. Male Sports persons who participate at inter-university level were randomly selected as samples.

Tools and techniques

To accomplish the study Maximum Breath Holding Capacity test was used. The following test was performed on various sports person whom asked to hold their breath as long as possible. The response were measured in seconds.

Statistical method

The obtained data were analyzed by applying one way analysis of variance in order to determine the Maximum Breath Holding Capacity among Long Distance Runners, Yoga and Swimming games players. The level of significance was set at 0.05. For obtaining reliable result special statistics software (SPSS-20) was used.

Table 1: Descriptive statistics

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Long distance	20	57.80	9.50	2.12	53.35	62.24	43	75
Yoga	20	60.50	11.53	2.57	55.10	65.89	40	78
Swimming	20	65.25	9.98	2.23	60.57	69.92	47	79
Total	60	61.18	10.66	1.37	58.42	63.93	40	79

The table no 1 shows the characteristic of selected sample among all discipline and it was observed that mean of long distance players were 57.80±9.50 and yoga players were 60.50±11.53 and mean and standard deviation of swimming players were 65.25±9.98 respectively. The minimum std.

error was observed which shows homogeneity between selected samples. So, now we can perform our parametric statistics.

ANOVA

Table 2: Analysis of Variance Maximum Breath Holding Capacity

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	569.033	2	284.517	2.642	.080
Within Groups	6137.950	57	107.683		
Total	6706.983	59			

*significant at 0.05 level

An analysis of table no.2 reveals that there would be a significant difference among Long Distance Runners, Yoga and Swimming games players in their Maximum Breath Holding Capacity. Because significant value is less than level

of significance which is 0.05 since the calculated significance value is found significant, therefore we need to perform Post-hoc analysis.

Table 3: Multiple Comparisons

Dependent Variable: Maximum Breath Holding Capacity LSD						
(I) Games	(J) Games	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Long Distance Rinnners	Yoga	-2.70000	3.28151	.414	-9.2711	3.8711
	Swimming	-7.45000*	3.28151	.027	-14.0211	-.8789
Yoga	Long Distance Rinnners	2.70000	3.28151	.414	-3.8711	9.2711
	Swimming	-4.75000	3.28151	.153	-11.3211	1.8211
Swimming	Long Distance Rinnners	7.45000*	3.28151	.027	.8789	14.0211
	Yoga	4.75000	3.28151	.153	-1.8211	11.3211

*. The mean difference is significant at the 0.05 level.

Table no 3 shows that swimmers are having more Breath Holding Capacity in comparison of long distance runners. A significant difference was found between them. Not much

difference was found between long distance runner and yoga games players in their Breath Holding Capacity.

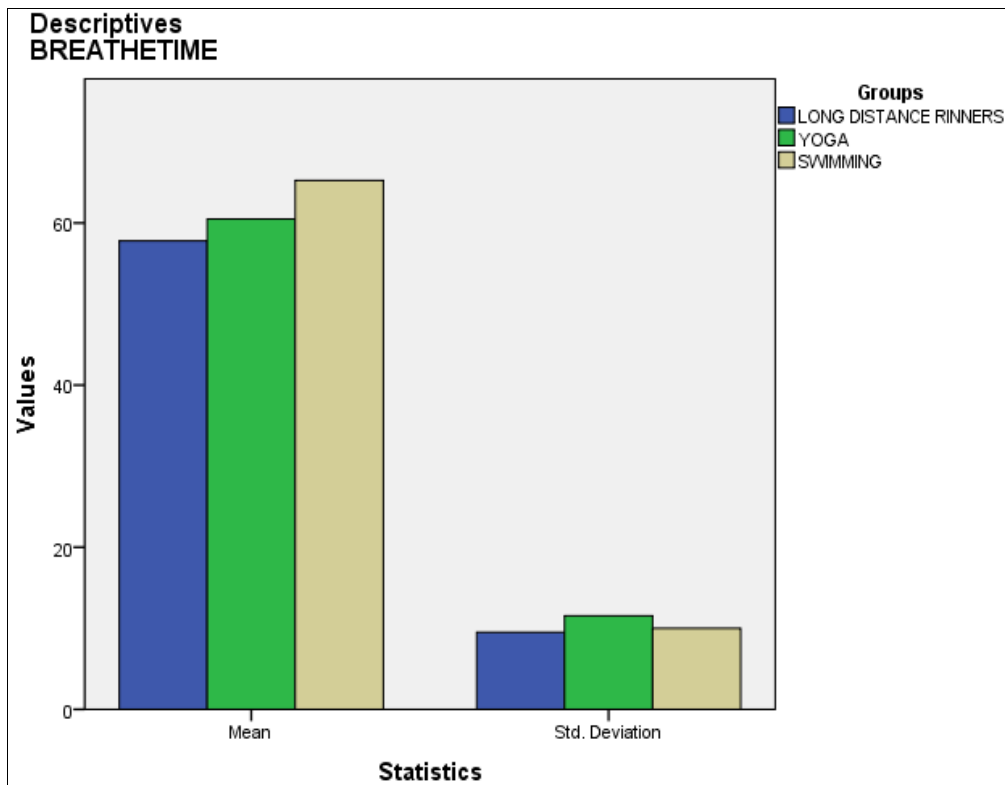


Fig 1: The graphical presentation of mean and standard deviation Long Distance Runners, Yoga and Swimming games players in their Maximum Breath Holding Capacity

Conclusion

After analysis the obtained results it was observed that hypothesis which was formulated earlier that “there would be no significant difference among Long Distance Runners, Yoga and Swimming games players in their Maximum Breath Holding Capacity” was accepted.

Swimmers are having more Breath Holding Capacity in comparison of long distance runners. A significant difference was found between them. Not much difference was found between long distance runner and yoga games players in their Breath Holding Capacity.

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