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Effect of yogic practices and physical exercises on selected physical and physiological variables among school level handball players

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Abstract

The purpose of the study was to find out the effect of yogic practices and physical exercise on selected physical and physiological variables among school level handball players. To achieve this purpose of the study, forty five school students were selected as subjects who were from the Dolphin Mat. Hr. Sec. School and MNU Jeyaraj Annapackiam Mat. Hr. Sec. School, Madurai. The selected subjects were aged between 14 to 17 years. They were divided into three equal groups of fifteen each, Group-I underwent yogic exercise programme and Group-II underwent physical exercise programme and Group-III acted as control that did not participate in any special training apart from their regular curricular activities. The experimental group underwent the training programme for three days per week for eight weeks. Among the physical variables such as explosive power was measuring by standing broad jump in centimeter and physiological variable such as Breath holding time was measuring by manual method using stop watch. The data were collected at prior and immediately after the training programme for each criterion variables. Analysis of covariance (ANCOVA) was applied for analyze the data. In all the cases, 0.05 level was used to test this significance. The findings of the study showed that there was significant difference between the pre-test of Explosive Power and Breath Holding Time. The findings of the study showed that there was a significant difference between the post-test and adjusted post-test of explosive power and Breath holding time.

Keywords: Yogic practices, physical variables, explosive power, Breath holding time and handball players

Introduction

A sport is an organized, competitive, entertaining and skillful physical activity requiring commitment, strategy and fair play in which a winner can be defined by objective means. It is governed by a set of rules or customs. In sports the key factors are the physical capabilities and skills of the competitor when determining the outcome (winning or losing). The physical activity involves the movement of people, animals and/or a variety of objects such as balls and machines or equipment. In contrast, games such as card games and board games, though these could be called mind sports and some are recognized as Olympic sports, require primarily mental skills and only mental physical involvement. Non-competitive activities, for example as jogging or playing catch are usually classified as forms of recreation.

Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and body building, where skill does not have to be shown and the criteria are not as well defined. Records are kept and updated for most sports at the highest levels, while failures and accomplishments are widely announced in sport news.

Training is a programme of exercises designed to improve the skills and increase the energy capacity of an athlete for a particular event. In sports, the word 'training' is generally understood to be a synonym for doing physical exercise. In a narrow sense, training is doing physical exercises for the improvement of performance or general fitness. Sport training is a basic preparation for better performance through physical exercise. It is based on scientific principles and aims at education and performance enhancement.

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Sports activities consist of motor movement and action and their success depends to a great extent on how correctly they are performed. Techniques of training and improvement of tactical efficiency play a vital role in a training process.

A yogic routine includes muscle strengthening and toning postures, deep breathing, relaxation techniques, and focused meditation for overall enhanced physical and mental fitness. Physical activity is known to both relieve stress and to improve the body's appearance. Therefore, Yogic alleviates stress, which can sap energy and breed negativity, as well as promote mental resilience and a positive body image, resulting in an overall boost in confidence levels. Physical exercise is a bodily activity that develops and maintains physical fitness and overall health. It is often practiced to strengthen muscles and the cardiovascular system, and to hone athletic skills. Frequent and regular physical exercise boosts the immune system, improve cardiovascular endurance. It also improves mental health and helps prevent

depression. Yogic is also known as one of the oldest holistic health care systems, not just because of its fundamental healing approach, but also because of its many benefits for physical, mental and spiritual wellbeing.

Independent Variables

- Yogic practices
- Physical Exercise

Dependent Variables

- Explosive power
- Breath Holding Time

Explosive Power

The data collected prior to and after the experimental period on explosive power of yogic practices group and physical exercises group and Control Group were analyzed and presented in Table – 1.

Table 1: Analysis of Covariance on Explosive Power of Yogic Practices Group and Physical Exercises Group and Control Group

	Yogic practices group	Physical Exercise Group	Control Group	SOV	Sum of Square	df	Mean Square	'F' ratio
Pre- test Means	1.78	1.77	1.68	B:	.210	2	0.11	1.47
				W:	3.133	42	0.075	
Post-test Means	1.91	2.20	1.73	B:	3.287	2	1.64	32.16*
				W:	2.159	42	.051	
Adjusted Post-test Means	1.89	2.17	1.77	B:	2.416	2	1.21	33.61*
				W:	1.48	41	.036	

*(The table value required for significance at 0.05 level of confidence with df 2 and 42 was 3.23, and 2 and 41 was 3.23).

Table – 2 shows that the pre-test means on explosive power of yogic practices group and physical exercises group and Control Groups were 1.78, 1.77 and 1.68 respectively. The obtained 'F' ratio value of 1.47 for pre-test score of yogic practices group and physical exercises group and Control Group on explosive power was less than the required table value of 3.23 for significance with df 2 and 42 at 0.05 level of confidence.

The post-test mean values on explosive power of yogic practices group and physical exercises group and Control Groups were 1.91, 2.20 and 1.73 respectively. The obtained 'F' ratio value of 32.16 for post-test scores of yogic practices group and physical exercises group and Control Group was greater than the required table value of 3.23 for significance

with df 2 and 42 at 0.05 level of confidence.

The adjusted post-test mean values nonexplosive power of yogic practices group and physical exercises group and Control Groups were 1.89, 2.17 and 1.77 respectively. The obtained 'F' ratio value of 33.61 for adjusted post-test scores of yogic practices group and physical exercises group and Control Group was higher than the required table value of 3.23 for significance with df 2 and 41 at 0.05 level of confidence.

The above statistical analysis indicates that there was a significant increase on explosive power after the training. Further, to determine which of the paired means had a significant difference, the Scheffe's test was applied. The result of the test is presented in Table – 2.

Table 2: Scheffe's Test for the Difference between the Adjusted Post-Test Means on Explosive Power

Adjusted Post-test Means				
Yogic practices group	Physical Exercise Group	Control Group	Mean Difference	Confidence interval at.05 level
1.89		1.77	0.12*	0.0834
1.89	2.17		0.28*	0.0834
	2.17	1.77	0.40*	0.0834

*(The table value required for significance at 0.05 level of confidence with df 2 and 42 was 3.23, and 2 and 41 was 3.23).

Table – 2 shows that the adjusted post-test means differences on explosive power between yogic practices group and control group, between yogic practices group and Physical Exercise Group and between Physical Exercise Group and control group were 0.12, 0.28 and 0.40, respectively, which were significant at 0.05 level of confidence. The adjusted post-test means difference on explosive power between yogic practices group and physical exercises group and Control Group was 0.28, which was significant at 0.05 level of

confidence. It was concluded from the results of the study that of yogic practices group and physical exercises group have increased the explosive power significantly. The result of the study also showed that significant difference was found between the training groups group in favour of physical exercises group.

The mean values on explosive power of yogic practices group and physical exercises group and Control Group are graphically represented in figure - 1.

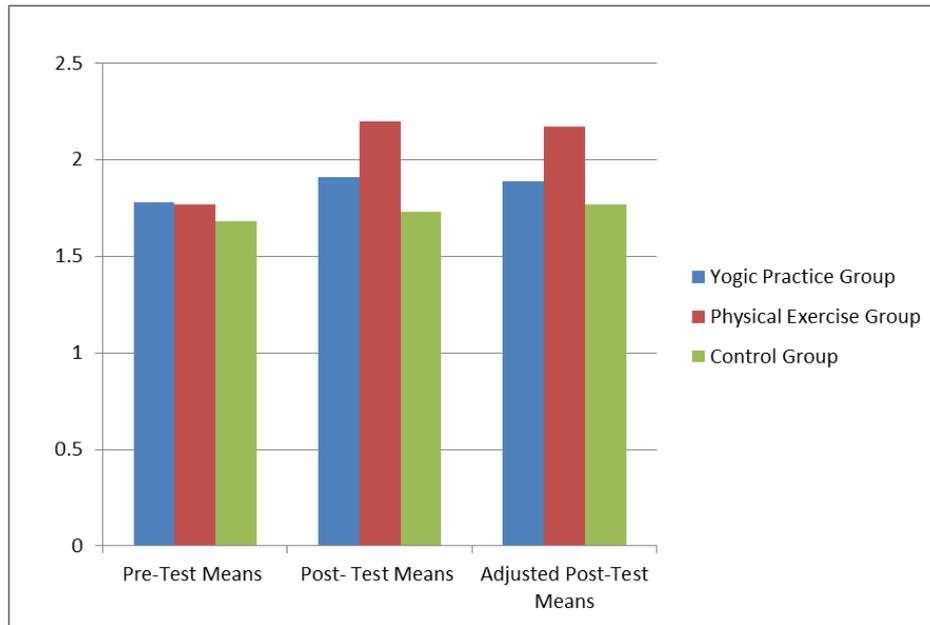


Fig 1: Pre-Test, Post-Test and Adjusted Post-Test Means Differences of Explosive Power

The Pre-Test, Post-test and Adjusted Post Test Mean values of yogic practices group, Physical exercise group and Control group on Explosive Power in centimeter

Table 3: Analysis of Covariance on Breath Holding Time of Experimental Groups and Control Group

Test	yogic practices group	Physical Exercise group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	29.53	29.20	28.93	Between	2.20	2	1.10	0.12
				Within	400.80	42	9.54	
Post Test Mean	34.53	32.40	28.73	Between	259.78	2	129.89	13.88*
				Within	393.20	42	9.36	
Adjusted Post Test Mean	34.22	32.40	28.98	Between	213.09	2	106.55	112.16*
				Within	39.09	41	0.95	

*(The table value required for significance at 0.05 level of confidence with df 2 and 42 was 3.23, and 2 and 41 was 3.23).(Breath Holding Time Scores in Seconds)

Table – 3 shows that the pre-test means on Breath Holding Time of yogic practices group and physical exercises group and Control Groups were 29.53, 29.20 and 28.93 respectively. The obtained ‘F’ ratio value of 0.12 for pre-test score of yogic practices group, physical exercises group and Control Group on explosive power was less than the required table value of 3.23 for significance with df 2 and 42 at 0.05 level of confidence.

The post-test mean values on breath holding time of yogic practices group, physical exercises group and Control Groups were 34.53, 32.40 and 28.73 respectively. The obtained ‘F’ ratio value of 13.88 for post-test scores of yogic practices group and physical exercises group and Control Group was greater than the required table value of 3.23 for significance

with df 2 and 42 at 0.05 level of confidence.

The adjusted post-test mean values on breath holding time of yogic practices group and physical exercises group and Control Groups were 34.22, 32.40 and 28.98 respectively. The obtained ‘F’ ratio value of 112.16 for adjusted post-test scores of yogic practices group and physical exercises group and Control Group was higher than the required table value of 3.23 for significance with df 2 and 42 at 0.05 level of confidence.

The above statistical analysis indicates that there was a significant increase on Breath holding time after the training. Further, to determine which of the paired means had a significant difference, the Scheffe’s test was applied. The result of the test is presented in Table – 4.

Table 4: Scheffe’s Test for the Difference between the Adjusted Post-Test Means Of breath Holding Time

Adjusted Post-test Means				
Yogic practices group	Physical Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level
34.22		28.98	5.54*	1.835
34.22	32.40		1.82*	1.835
	32.40	28.98	3.42*	1.835

*(The table value required for significance at 0.05 level of confidence with df 2 and 42 was 3.23, and 2 and 41 was 3.23).

Table – 4 shows that the adjusted post-test means differences on Breath holding time between Yogic practices group and control group, between Yogic practices group and Physical Exercise Group and between Physical Exercise Group and

control group were 5.54, 1.82 and 3.42 respectively, which were significant at 0.05 level of confidence. The adjusted post-test means difference on breath holding time between yogic practices group and physical exercises group and

Control Group was 1.82, which was significant at 0.05 level of confidence. It was concluded from the results of the study that of yogic practices group and physical exercises group have decreased the breath holding time significantly. The result of the study also showed that significant difference was

found between the training groups group in favour of yogic practices group.

The mean values on breath holding time of yogic practices group and physical exercises group and Control Group are graphically represented in figure - 2.

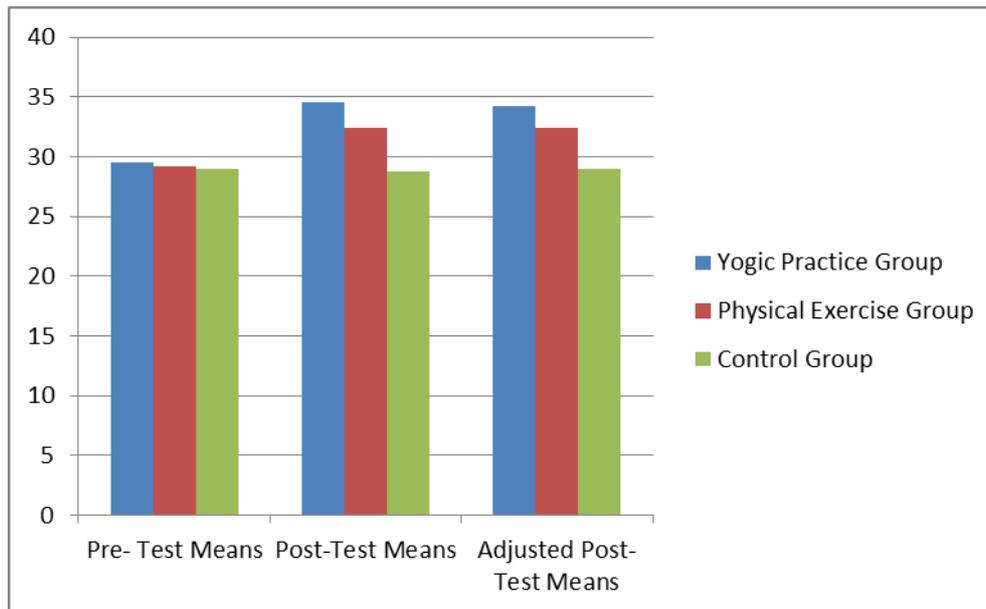


Fig 2: The Pre-Test, Post-test and Adjusted Post Test Mean values of yogic practices group, Physical exercise group and Control group on Breath Holding Time in Seconds

Conclusions

From the analysis of the data, the following conclusions are drawn.

1. The result of the study also revealed that there was a significant improvement on explosive power after the yogic practices and physical exercise group significant improvement was found between the training groups on explosive power in favour of physical exercise group.
2. There was a significant improvement on Breath holding time after the yogic practices and physical exercise group significant improvement was found between the training groups on Breath holding time in favour of yogic practices group.

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