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Influence of physical exercises on selected physiological variables among college men hockey players

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Abstract

The purpose of the study was to find out the effect of physical exercises on selected physiological variables such as resting pulse rate and breath holding time among college men hockey players. To achieve this purpose of the study, thirty college men hockey players studying in Voorhees College, Vellore, Sacred Heart College, Vellore Kingston Engineering College, Vellore and Thanthai Periyar Government Institute of Technology, Vellore, Tamilnadu, India were selected as subjects at random. The age of the subjects were ranged from 18 to 24 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as physical exercises group (Group I) and control group (Group II). The physical exercises group (Group I) underwent their respective training programme for three days per week for twelve weeks. Group II acted as control in which they did not undergo any special training programme apart from their regular day today activities. All the subjects of two groups were tested on selected criterion variables such as resting pulse rate and breath holding time at prior to and immediately after the training programme by using radial pulse and holding the breath for time respectively. The analysis of covariance (ANCOVA) was used to analysis the significant difference, if any in between the groups. The level of significant to test the 'F' ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate. The results of the study revealed that there was a significant difference between physical exercises group and control group on selected physiological variables such as resting pulse rate and breath holding time. Significant changes on selected criterion variables were also noticed due to physical exercises.

Keywords: Physical exercises, physiological variables, hockey players

Introduction

Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons, including increasing growth and development, preventing aging, strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, and also enjoyment. Frequent and regular physical exercise boosts the immune system and helps prevent certain "diseases of affluence" such as coronary heart disease, type 2 diabetes, and obesity. It may also help prevent stress and depression, increase quality of sleep and act as a non-pharmaceutical sleep aid to treat diseases such as insomnia, help promote or maintain positive self-esteem, improve mental health, maintain steady digestion and treat constipation and gas, regulate fertility health, and augment an individual's sex appeal or body image. Aside from the health advantages, these benefits may include different social rewards for staying active while enjoying the environment of one's culture. Many individuals choose to exercise publicly outdoors where they can congregate in groups, socialize, and appreciate life.

Methodology

The purpose of the study was to find out the effect of physical exercises on selected physiological variables such as resting pulse rate and breathe holding time among college men hockey players. To achieve this purpose of the study, thirty college men hockey players studying in Voorhees College, Vellore, Sacred Heart College, Vellore Kingston Engineering College, Vellore and Thanthai Periyar Government Institute of Technology, Vellore, Tamilnadu, India were selected as subjects at random. The age of the subjects were ranged from 18 to 24 years.

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the groups. The level of significant to test the ‘F’ ratio obtained by the analysis of covariance was tested at.05 level of confidence, which was considered as an appropriate.

Analysis of the Data

The effect of physical exercises on each physiological variable were analyzed separately and presented below.

Resting Pulse Rate

The analysis of covariance on resting pulse rate of the pre and post test scores of physical exercises group and control group have been analyzed and presented in Table I.

Table 1: Analysis of Covariance of the Data on Resting Pulse Rate of Pre and Post Tests Scores of Physical Exercises Group and Control Group.

test	Physical Exercises Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained ‘F’ Ratio
Pre Test							
Mean	69.73	70.20	Between	1.63	1	1.63	1.11
S.D.	1.34	1.36	Within	41.33	28	1.48	
Post Test							
Mean	67.87	69.93	Between	32.03	1	32.03	11.11*
S.D.	0.98	1.18	Within	80.70	28	2.88	
Adjusted Post Test							
Mean	68.07	69.73	Between	19.71	1	19.71	32.97*
			Within	16.14	27	0.60	

* Significant at.05 level of confidence

(The table value required for significance at.05 level of confidence with df 1 and 28, 1 and 27 were 4.20 and 4.21 respectively)

The table I shows that pre-test means on resting pulse rate of physical exercises group and control group are 69.73 and 70.20 respectively. the obtained “F” ratio of 1.11 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at.05 level of confidence on resting pulse rate. The post-test means on resting pulse rate of physical exercises group and control group are 67.87 and 69.93 respectively. the obtained “F” ratio of 11.11 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at.05 level of confidence on resting pulse rate.

The table I further shows that the adjusted post-test mean values on resting pulse rate of physical exercises group and control group are 68.07 and 69.73 respectively. The obtained “F” ratio of 32.97 for adjusted post-test means is greater than the required table value of 4.20 for df 1 and 28 required for significance at.05 level of confidence on resting pulse rate. The results of the study indicated that there was a significant difference between the adjusted post-test means of physical exercises group and control group on resting pulse rate.

Breath Holding Time

The analysis of covariance on breath holding time of the pre and post test scores of physical exercises group and control group have been analyzed and presented in Table II.

Table 2: Analysis of Covariance of the Data on Breath Holding Time of Pre and Post Tests Scores of Physical Exercises Group and Control Group

test	Physical Exercises Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained ‘F’ Ratio
Pre Test							
Mean	49.13	48.80	Between	0.83	1	0.83	0.58
S.D.	1.20	1.01	Within	40.13	28	1.43	
Post Test							
Mean	51.33	49.07	Between	38.53	1	38.53	15.24*
S.D.	1.11	1.06	Within	70.80	28	2.53	
Adjusted Post Test							
Mean	51.20	49.20	Between	29.53	1	29.53	106.44*
			Within	7.49	27	0.28	

* Significant at.05 level of confidence

The table II shows that pre-test means on breath holding time of physical exercises group and control group are 49.13 and 48.80 respectively. the obtained “F” ratio of 0.58 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at.05 level of confidence on breath holding time. The post-test means on breath holding time of physical exercises group and control group are 51.33 and

49.07 respectively. the obtained “F” ratio of 15.24 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at.05 level of confidence on breath holding time.

The table II further shows that the adjusted post-test mean values on breath holding time of physical exercises group and control group are 51.20 and 49.20 respectively. The obtained

“F” ratio of 106.44 for adjusted post-test means is greater than the required table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on breath holding time. The results of the study indicated that there was a significant difference between the adjusted post-test means of physical exercises group and control group on breath holding time.

Conclusions

1. There was a significant difference between the adjusted post-test means of physical exercises group and control group on resting pulse rate.
2. There was a significant difference between the adjusted post-test means of physical exercises group and control group on breath holding time.
3. And also it was found that there was a significant improvement on selected criterion variables such as resting pulse rate and breath holding time due to hatha yoga.

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