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IMPACT OF PHYSICAL EXERCISES TRAINING ON SELECTED PHYSICAL FITNESS PHYSIO- LOGICAL VARIABLES OF COLLEGE MEN

ABSTRACT

To achieve the purpose of the present study, thirty college men were randomly selected from G.G.N. Khalsa College, Civil Lines Ludhiana, and Arya College, Ludhiana. Their age ranged from 20 to 25 years. They were assigned to two groups, experimental group-I with fifteen boys who were given physical exercises training for 12 weeks, five days a week. The other group-II with fifteen boys, acted as the control group. The experimental group was tested on physical fitness variables, namely speed, respiratory rate, and breath-holding time. The selected criterion variables speed was tested with 50 m dash; the respiratory rate was tested manually counted on the abdomen, and breath-holding time was tested with breath-holding time with the nose clip. The pre and post-test data were collected and treated with ANCOVA. The level of confidence was fixed at 0.05. The study results showed that the experimental group significantly improved selected physical fitness, physiological variables, namely speed, respiratory rate, and breath-holding time due to the impact of the physical exercises training program. The control group did not improve on selected physical fitness variables.

KEYWORDS: *Physical Exercises Training, Speed, Respiratory Rate, and Breath Holding Rate.*

INTRODUCTION

Training means preparing for something for an event or reason of athletic competition. A nursing carrier or operative performance of military combat, much growth and change occur during training. Training means a systematic scientific program of conditioning exercises and physical activities designed to improve the physical fitness and skill of the players or athlete participated.

Sports training is the process of sports protection based on scientific and pedagogical principles for higher performance (Hardyal Singh, 1991). Physical fitness is very much needed to improve the capacity of the heart, blood vessels, lungs, and muscles to function at optimal efficiency. It gives a basis for living a full and satisfying lifestyle. The essential health components of physical fitness are cardiorespiratory endurance, strength, muscular endurance, flexibility, and body composition. To be physically fit requires effort, but exercise does not have to be punished for helping and maintaining physical fitness. Regular and vigorous exercise of the total body is an essential ingredient of muscular and circulatory fitness, the key to good health and well-being. An increase in body fatness, a loss of muscle tone, and a poor breathing capacity are some of the evident signs of physiological deterioration. Physical fitness is a general state of good physical health obtaining; maintaining physical fitness is a result of



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physical activity, proper diet and nutrition, and of course, proper rest for physical recovery. Regardless of age, fitness can be described as a condition that helps individuals look, feel, and do their best. Thus physical fitness trainers describe it as the ability to perform daily tasks vigorously and alertly, with leftover energy to enjoy leisure time activities and meet emergency demands. The purpose of the study was to find out the impact of physical exercises training selected on physical fitness physiological variables of college men.

METHODOLOGY

To achieve the purpose of the present study, thirty college men were randomly selected from college. Their age ranged from 20 to 25 years. They were assigned to two groups, namely experimental group-I with fifteen boys who were given physical exercises training for 12 weeks five days a week and other group-II with fifteen boys acted as a control group. The experimental group was be tested on physical fitness variables, namely speed, respiratory rate, and breath-holding time. The selected criterion variables speed was tested with 50 m dash; the respiratory rate was tested manually counted on the abdomen, and breath-holding time was tested with breath-holding time with the nose clip. The pre and post-test data were collected and treated with ANCOVA. The level of confidence was fixed at 0.05.

Training Program

TABLE-I

Number of Weeks and Intensity			Exercise	Number Set	Duration	Density	Density In Round
1 to 4 week	5 to 8 week	9 to 12week					
60% TH R	70% TH E	80% THE	Aerobic	1	15 Min	6 Min	10 Min
			Running	1	20 Min	5 Min	7 Min
			Slow Jog	1	15 Min	3 Min	5 Min

THR=> Target Heart Rate

Aerobic type of exercises namely jogging, hopping, galloping, jumping, forward and backward kicking, swinging the legs side to side, and swinging the legs side to side with arms moving, two count jumping jacks and Skip-kick.

RESULTS

TABLE-II

Analysis of covariance on speed of physical exercises group and control group

Test	Physical Exercises Group	Control Group	Source Of Variance	Sum Of Squares	df	Mean Square	' F ' ratio
Pre Test	Mean	7.52	Between Within	0.73	1 28	0.073	0.267
	S.D	7.62		7.658		0.273	
		0.53					
Post Test	Mean	7.25	Between Within	5.192	1 28	5.192	13.30 *
	S.D	8.08		10.926		0.390	
		0.72					
Adjusted Mean		7.38	Between Within	4.54	1 27	4.504	13.95 *
		7.85		8.716		0.323	

* Significant .05 level of confidence.

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

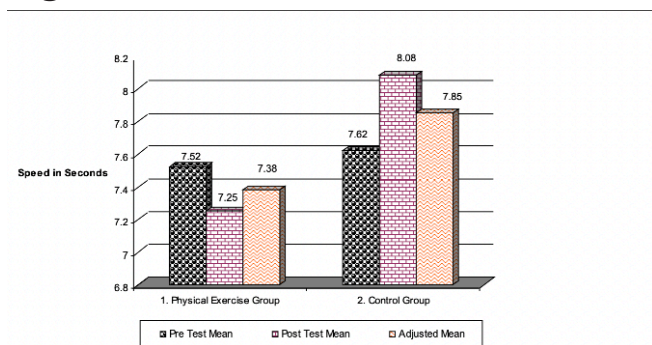
It is clear from the table-II that the pre-test (F = 0.267, p > 0.05) showed no significant difference in speed. However, post (F = 13.30, p < 0.05) and adjusted post-test mean (F = 13.95, p < 0.05) value showed significant difference. The covariate



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is significant, indicating that speed before training had a significant improvement after 12 weeks of physical exercises training. Since the adjusted post-test mean is significant.

Figure – I



Bar diagram showing the mean values of physical exercises group and control group on speed

TABLE-III

Analysis of covariance on respiratory rate of physical exercises group and control group

Test	Physical Exercises Group	Control Group	Source Of Variance	Sum Of Squares	df	Mean Square	'F' ratio
Pre Test Mean	33.3	35.5	Between	20.833	1	20.833	1.850
S.D	3.95	2.61	Within	315.33	28	11.262	
Post Test Mean	29.66	34.4	Between	168.03	1	168.03	17.113*
S.D	1.98	3.90	Within	274.9	28	9.819	
Adjusted Mean	32.03	34.16	Between	108.16	1	108.16	
S.D			Within	200.04	27	7.409	14.599*

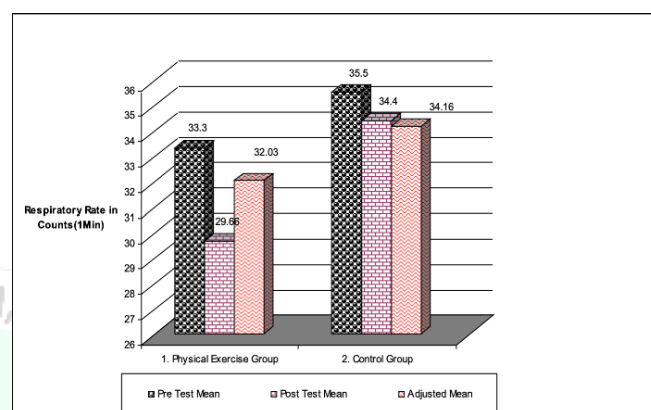
* Significant .05 level of confidence.

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

It is clear from the table-III that the pre-test ($F = 1.850, p > 0.05$) showed no significant difference in respiratory rate. However, post ($F = 17.113, p < 0.05$) and adjusted post-test mean ($F = 14.599, p < 0.05$) value showed significant difference. The co-

variate is significant, indicating that respiratory rate before training had a significant improvement after 12 weeks of physical exercises training. Since, the adjusted post-test mean is significant.

Figure – II



Bar diagram showing the mean values of physical exercises group and control group on respiratory rate

TABLE-IV

Analysis of covariance on respiratory rate of physical exercises group and control group

Test	Physical Exercises Group	Control Group	Source Of Variance	Sum Of Squares	df	Mean Square	'F' ratio
Pre Test Mean	30.24	27.3	Between	63.3	1	63.3	1.5
S.D	4.48	7.69	Within	65	28	65	96
Post Test Mean	32.66	26.60	Between	270.0	1	270.0	14.92*
S.D	2.60	5.40	Within	506.66	28	18.09	
Adjusted Mean	29.66	28.7	Between	154.27	1	154.27	
S.D			Within	271.8	27	10.05	15.34*



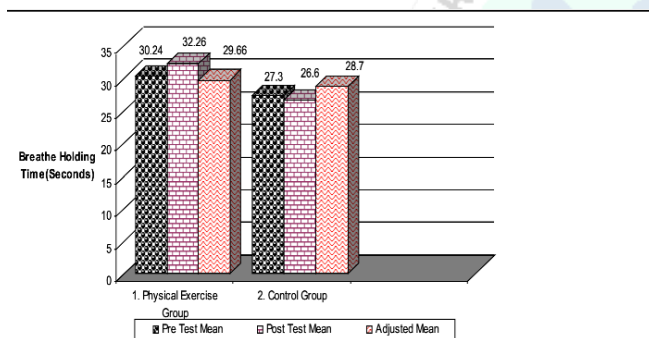
* Significant .05 level of confidence.

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

It is clear from table-IV that the pre-test ($F = 1.596$, $p > 0.05$) showed no significant difference in breath holding time. However, post ($F = 14.92$, $p < 0.05$) and adjusted post-test mean ($F = 15.34$, $p < 0.05$) value showed significant difference. The covariate is significant, indicating that breath-holding time before training had a significant improvement after 12 weeks of physical exercises training. Since, the adjusted post-test mean is significant.

Figure – III



Bar diagram showing the mean values of physical exercises group and control group on breath holding time

DISCUSSION ON FINDINGS

The results of the study indicate that the impact of physical exercises training, which involved various aerobic exercises on the college level students for twelve weeks of physical exercise training, significantly improved the selected physical fitness variable (speed) and physiological variables breath-holding time, and respiratory rate. The results study is in line with that regular training with increased performance of speed (Lakka&Salomen 1992) and AadahlM, et al., (2009). Regular physical exercises training altered respiratory rate and improve breath holding time (Benelli, Ditroilo, and Vito 2004) and (Laukkanen, 2001) and Pedersen B, Saltin B.(2006).

CONCLUSIONS

The experimental group significantly improved of selected physical fitness variables, namely speed and physiological variables, respiratory rate, and breath-holding time of college students due to the physical exercises training program. The control group did not improve on selected physical physiological variables.

REFERENCES

1. Aadahl M, Kjaer M, Jørgensen T.(2007) Associations between overall physical activity level and cardiovascular risk factors in an adult population. *Eur J Epidemiol.* 22(6):369- 378
2. Aadahl M, von Huth Smith L, Pisinger C. (2009). Five-year change in physical activity is associated with changes in cardiovascular disease risk factors: the Inter99 study. *Prev Med.* 48(4):326–331.
3. Hardayal Singh, (1997). *Science of Sports Training.* New Delhi: D.V.S. Publication.
4. Lakka T.A. & J.T. Salonen. 1992. "Physical activity on speed and serum lipids: a cross-sectional population study in eastern Finnish men". *American Journal of Epidemiology.* 136(7):806-18
5. Laukkanen RM, Kalaja MK, Kalaja SP, Holmala EB, Paavolainen LM, TummavuoriM, Virtanen P, Rusko HK (2001), "Heart rate during aerobics classes in women with different previous experience of aerobics." *Eur J Appl Physiol.* 84(1-2):64-8
6. Pedersen B, Saltin B. (2006) Evidence for prescribing exercise as therapy in chronic disease. *Scand J Med Sci Sports.* 16(Suppl 1):3–63.