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PERIODIC EFFECT OF FIVE MINUTE DAILY PLANK TRAINING ON HEART FACTORS

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ABSTRACT

The Purpose of the study was to find out the effect of five minute plank training on heart factor that involves resting heart rate. and Vital capacity. 30 male students from K C Public School, Jammu were selected randomly as the subjects for the study. The age of the subjects ranged between 17 – 19 years. For the study pre test – post test randomized group design, which consists of control group (15 students) and experimental group (15 students) was used. The data were collected through the pre test, before training and post test, after six weeks of plank training. For comparing pre and post test means of experimental and control groups of selected physiological variables, descriptive analysis and Analysis of Co-Variance (ANCOVA) were used, the data analyzed with the help of SPSS (21.0 version) software and the level of significance was set at 0.05 level of confidence. It was found that there was significant difference between pre and post test (experimental group) of Resting Heart Rate (RHR) and Vital Capacity (VC). On the basis of the findings it was concluded that the plank training might be responsible for the improvement of Resting Heart Rate and Vital Capacity.

Keywords : Training, Heart Factors, Resting Heart Rateand Vital Capacity.

INTRODUCTION:

Training is well in advance organized programme with an aim of optimum performance. Training is a basic process of preparation for the highest level of performance, this preparation can be for any kind of activity. It is physiological, psychological, intellectual preparation of an individual in a systematic instructional process to assist the athlete for achieving highest possible performance. Training is a systematic and scientifically designed work out of physical exercises and mental preparedness for the attainment of optimum level of performance. Training is a process designed for the development of various motor and psychological qualities need specifically by individual who is under straining to perform at best possible level in competition. Training is a programme organized to achieve all needed aspects of physical fitness, technical

and tactical demands and psychological preparedness, which increases the capabilities of performer.

Plank is physical exercise of relatively high intensity that depends primarily on the anerobic energy-generating process. Aerobic literally means "living in air", and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time (Sharon et al 2007). Aerobic exercises are a wonderful way to burn your fat and tone your body muscles, leaving you healthy and in a good shape. Finding the perfect Workout Routines takes time and effort. These best workout routines is a great place to start if a person is interested in flat abs.

All these activities are healthy, easier to perform and inexpensive. Aerobic exercises are beneficial in so many ways like strengthening the respiratory muscles, strengthening and enlarge the heart muscle and improve its pumping, improving blood circulation and red blood cells, reducing stress and depression, increasing your stamina and endurance of your muscles, In short it reduces the risk of heart attacks.

OBJECTIVES OF THE STUDY:

To find out the effect of six weeks daily plank training on selected physiological variables i.e. resting heart rate (RHR), Vital capacity (VC).

METHODOLOGY:

Selection of Subjects- For the present study, 30 male students from K C Public School, Jammu were selected as subject. The age of the subjects ranged from 17-19 years. The subjects were divided into two groups i.e. one experimental (Aerobic exercise group, 15 students) and one control group (15 students).

Selection of Variables- Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study:

1. plank training (Independent variables)

2. Physiological variables (Dependent variables)

- Resting heart rate (RHR)
- Vital capacity (VC)

Criterion Measures

- Vital capacity was measured by Dry Spirometer and recorded in milliliters.
- Heart rate was measured by gently pressing over the radial artery and recorded in numbers for one minute by using stop watch.

Experimental Design

For the study pre test & post test randomized group design, which consists of one control group (n=15) and one experimental group (n=15) was used. Equal numbers of subjects were assigned randomly to the group. One group served as experimental group (plank training group) on which treatment was assigned and the second group served as the control group.

Plank exercise training group O_1 T O_2

Control group O_1 O_2

Where- O_1 = Pre Observation, O_2= Post Observation and T= Treatment (training).

Collection of data

Before the administration of aerobic training, the selected tests for selected physiological variables were administered on both the experimental and control groups to collect pre test data. After the completion of six weeks of plank training again the same tests were conducted to collect the post training data. Necessary instructions were given to the subjects before administration of the tests.

Administration of training

The training for experimental group was administered at K C sports complex. Selected plank training were given to experimental group. Each training session consisted of 5 minute only and that too was exclusively for plank training.

Statistical Procedure

The data were analyzed by applying descriptive statistical and Analysis of Co-Variance (ANCOVA). The data analyzed with the help of SPSS software and the level of significance was set at 0.05 level of confidence.

RESULT:

Table 1

Analysis of co-variance of the mean of experimental group and control group in relation to RHR

Variables	Test	Mean & SD		ANCOVA table				
		Experimental	Control	Source of variance	SS	df	F	Sig.
RHR	Pre	76.45	77.57	B	15.640	1	.458	.762
				W	1646.453	28		
	Post	71.77	76.80	B	234.163	1	8.748*	.148
				W	789.452	28		
	Adjusted	71.87	76.45	B	151.005	1	20.744*	.000
				W	265.674	27		
VC	Pre	4.7773	3.469	B	.651	1	3.345	.252
				W	7.338	28		
	Post	5.7884	3.482	B	4.921	1	19.874*	.000
				W	8.679	28		
	Adjusted	5.147	3.627	B	1.868	1	33.876*	.000
				W	1.605	27		

*significant at 0.05 level, B=between group variance, W= within group variance.

The analysis of co-variance indicated that the resultant F-ratio of RHR (..458) and VC (3.345) were insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was

quite successful. The post-test means of all the two groups yielded an F-ratio of RHR (8.748) and VC (19.874) which were significant at 0.05 level of significance. The difference between the adjusted posts means were found significant as the obtained F-ratio were 20.744 and 33.876 of RHR and VC respectively. Thus, mean significant difference exits between experimental and control group in relation to RHR and VC.

DISCUSSION:

The literature thoroughly supports the evidence that exercise intensity is directly related to the change in VO2max (Gossard *et al*., 1986). Higher doses of anaerobic intensity through plank exercise produce greater increases in VO2max, although these improvements are not proportionately greater. Regular participation in aerobic exercise often results in a decrease in resting heart rate (Katona *et al*. 1982; Smith *et al*. 1989). Similar study conducted by M. Muralikrishna and P.V. Shelvam in 2014 on Effect of different intensities of aerobic training on vital capacity of middle aged obese men; The results showed that High intensity aerobic training positively influences the cardiopulmonary (vital capacity).

R. Muthu Eleckuvan (2014). also conducted a study on "Effectiveness of Fartlek Training on Maximum Oxygen Consumption and Resting Pulse Rate". He found that the twelve weeks of fartlek training programme significantly improved maximum oxygen consumption and resting pulse rate.

CONCLUSIONS:

The results of the study indicate that the significant difference was found in pre and post test of (experimental group) resting heart rate (RHR). The results of the study indicate that the insignificant difference was found in pre and post test of (control group) resting heart rate (RHR). The results of the study also indicate that the significant difference was found in pre and post test of (experimental group) vital capacity (VC), and insignificant difference was found in pre and post test of (control group) vital capacity (VC), ($p>0.05$).

On the basis of the findings it was concluded that the plank training is responsible for the improvement of selected physiological variables like Resting Heart Rate (RHR), Vital Capacity (VC).

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