International Journal of Physical Education & Sports Sciences
Vol. 17, Issue No. 1, January-2022, ISSN 2231-3745

DOI: https://doi.org/10.29070/pvfjjp15

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Effect of Aerobic and Indigenous Training on Selected Physiological Variables

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Abstract: The present study aimed to examine the effect of specially designed aerobic activities andindigenous activities training program on selected variable of physiology. Total 45 female collegestudents were selected as the subject of the study. Resting heart rate, vital capacity and resting breathingrate were selected as the physiological variables. The selected subjected were divided into twoexperimental groups and one control group. Both experimental groups were given training for eightweeks. ANCOVA was used as statistical tool for the study. Result of the study showed that the aerobicactivities and indigenous activities training significantly improved heart rate and vital capacity. Whereasthere was no significant change observed in resting breathing rate.

Keywords: aerobic activities, indigenous activities training, physiological variables, resting heart rate, vital capacity, resting breathing rate, experimental groups, control group, ANCOVA, statistical tool

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INTRODUCTION

It has been rightly said that 'Sound Mind in a Sound Body'. One must be physically fit to has mantle toughness and to perform all his duties well. In this modern era, the general physical fitness level, health level and average age have been found to be reduced. Hence, it is really important to have physically fit youth. Resistance training increases physical activity (Hunter – 2004), many researches suggested that regular physical exercise improves quality of life and health of an individual (Penedo – 2005). Children at young age should be engaged in moderate to vigorous physical activities and exercises for about an hour or so (William – 2005). Youth who participate in regular physical activities are having improvement in their overall health status (Darren – 2006).

In this study, the researchers tried to develop a special training program of aerobic activities and indigenous activities, which can be performed with minimum resources and to examine its effect on selected physiological variables.

OBJECTIVE OF THE STUDY

The present study aimed to study the effect of aerobic and indigenous activities training program on selected physiological variables.

METHODOLOGY

Selection of Subjects: In this study total 45 college level female students were randomly selected as the subject for the study. These selected subjects were further divided into two experimental groups and one

control groups, 15 students in each group. Two experimental groups, Group A and Group B, were given training of aerobic activity and indigenous activity respectively. Group – C was treated as the control group.

Selection of Variables: Resting heart rate, vital capacity, and resting respiratory rate were selected as the physiological variables in this study.

Design of the Study: Pre and Post-test Design was selected as a research design of this study. Group – A participated in an aerobic activities training program whereas Group – B participated in a indigenous activities training program. These specially designed program was of 08 weeks and subjects were given training of the particular training for five days a week.

RESULT OF THE STUDY

Table – I

ANCOVA table of Vital Capacity

Test	Mean and Group				SS	df	MS	F
	A	B	C					
Pre-Test	3.973	3.993	3.987	B	0.003	2	0.002	0.008
				W	8.656	42	0.206	
				T	8.656	44		
Post Test	4.213	4.753	4.560	B	2.192	2	1.096	4.251*
				W	10.830	42	0.257	
				T	13.023	44		
Adjusted	4.217	4.751	4.459	B	2.145	2	1.073	4.358*
				W	10.090	41	0.246	
				T	914.400	45		

*Significant at 0.05 level,

The analysis of co-variance for vital capacity was not significant 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 two experimental groups was quite successful. The post-test means of all the three groups yielded an F-ratio of 4.251 which was significant at 0.05 level of significance. The difference between the adjusted post test means was found significant as the obtained F-ratio was 4.358 with significance level 0.05.

Table – II

Pair wise Comparison of Vital Capacity

Group		Mean Difference	Sig.
Group A	Group B	0.534*	0.005
Group A	Group C	0.243	0.188
Group B	Group C	0.291	0.115

The above table reveals that significant difference was found between aerobic activities and indigenous activities groups with mean difference of 0.534. Whereas no significant difference was found between aerobic activity groups and control group and indigenous activities and control groups also.

Table – III

ANCOVA table of resting heart rate

Test	Mean and Group				SS	df	MS	F
	A	B	C					
Pre-Test	79.267	79.333	79.467	B	0.311	2	0.156	0.002
				W	2804.000	42	66.762	
				T	2804.311	44		
Post Test	77.800	70.800	77.600	B	476.400	2	238.200	3.416*
				W	2928.400	42	69.724	
				T	3404.800	44		
Adjusted	77.877	70.819	77.504	B	473.173	2	236.586	11.661*
				W	831.865	41	20.289	
				T	259237.000	45		

The analysis of co-variance for resting heart rate was not significant 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 two experimental groups was quite successful. The post-test means of all the three groups yielded an F-ratio of 3.416 which was significant at 0.05 level of significance. The difference between the adjusted post test means was found significant as the obtained F-ratio was 11.661 with significance level 0.05.

Table – IV

Pair wise Comparison of resting heart rate

Group		Mean Difference	Sig.
Group A	Group B	7.058	0.000
Group A	Group C	0.373	0.822
Group B	Group C	6.685	0.000

The above table reveals that significant difference was found between aerobic activity group and indigenous activity group with mean difference of 7.058, and indigenous activity group and control with mean difference of 6.685. Whereas no significant difference was found between both of the experimental groups.

Table – V

ANCOVA table of resting respiratory rate

Test	Mean and Group				SS	df	MS	F
	A	B	C					
Pre-Test	19.267	19.867	19.333	B	3.244	2	1.622	0.315
				W	216.000	42	5.143	
				T	219.244	44		
Post Test	17.400	17.267	18.333	B	10.133	2	5.0667	1.253
				W	169.867	42	4.044	
				T	180.000	44		
Adjusted	17.503	17.091	18.406	B	13.466	2	6.733	2.238
				W	123.323	41	3.008	
				T	14225.000	45		

The analysis of co-variance for Resting respiratory rate was not significant in 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 two experimental groups was quite successful. The post-test means of all the three groups yielded an F-ratio of 1.253 which was not significant at 0.0.5 level of significance. The difference between the adjusted post test means was found not significant as the obtained F-ratio was 2.238 with significance level 0.05.

CONCLUSION OF THE STUDY

With the background of this study, it can be concluded that the specially designed training program of aerobic activities and indigenous activities training significantly improved heart rate and vital capacity. Whereas there was no significant change observed in resting breathing rate.

References

1. Hunter, G. R., McCarthy, J. P., & Bamman, M. M. (2004). Effects of resistance training on older adults. Sports medicine, 34, 329-348.

2. Penedo, F. J., & Dahn, J. R. (2005). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. Current opinion in psychiatry, 18(2), 189-193.

3. Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B., ... & Trudeau, F. (2005). Evidence based physical activity for school-age youth. The Journal of pediatrics, 146(6), 732-737.

4. Warburton, D. E., Nicol, C. W., & Bredin, S. S. (2006). Health benefits of physical activity: the evidence. CMAJ, 174(6), 801-809.