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Effect of Aerobic Dance and Suryanamaskar on Selected Low Physical Variables on School Children of Kerala State

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Abstract

The purpose of the study was to find out the effect of aerobic dance and suryanamaskar on the selected low physical low variables on school children of Kerala state. To achieve the purpose of the present study, forty five school children from Kerala state, India were selected as subjects at random and their ages ranged from 12 to 14 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (Aerobic dance training), Group II acted as Experimental Group II (Suryanamaskar) Group III acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Forty five school children from Kerala state, India was selected as subjects at random and their ages ranged from 12 to 14 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. Pre test was conducted for all the subjects on selected low physical variables. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to aerobic dance training, Experimental Group II was exposed to suryanamaskar practices and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on their physical variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant. Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The experimental training groups had shown better performance on physical variables than the control group.

Keywords: Aerobic Training, Suryanamaskar, School, Kerala.

Introduction

Aerobics refers to a variety of exercises that stimulate heart and lungs activity for a time period sufficiently long to produce beneficial changes in the body. Aerobic basically means living or working with oxygen. Aerobics or endurance exercises are those in which large muscle groups are used in rhythmic repetitive fashion for prolonged periods of time. Aerobics refers to a variety of exercises that stimulates heart and lungs activity for a time period sufficiently long to produce beneficial changes in the body. Running, swimming, cycling and jogging are typical aerobic exercises. The Suryanamaskara, is also great for Hatha yoga breath training. The physical basis of the practice links together twelve asanas in a dynamically performed series. A full round of suryanamaskar is considered to be two sets of the twelve poses with a change in the second set to moving the opposite leg first through the series. With increasing scientific research in yoga, its therapeutic and other aspects are also being explored. Aerobic exercise means the exercise where all body parts/muscles are supplied with enough oxygen with the increased heart rate. Aerobic exercises include brisk walking, jogging, swimming, cross country, skiing, hopping, and skipping. By doing aerobics, the whole body is used and major muscle groups including legs, trunk and arms get involved. In aerobic exercise the heart rate increases substantially, but never reaches its maximum level. The heart is always able to deliver sufficient oxygen-rich blood to muscles so that they can derive energy from fat and glycogen aerobically. Aerobic exercises builds stamina for sports and it also is the most important form of exercise for health, since it increases the efficiency of heart, circulation and muscles. Aerobic exercise is the keystone of fitness by doing aerobics it increases the capillary network in the body.

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Methodology

The purpose of the study was to find out the effect of aerobic dance and suryanamaskar on the selected low physical variables on school children of Kerala state. To achieve the purpose of the present study, forty five school children from Kerala state, India were selected as subjects at random and their ages ranged from 12 to 14 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (Aerobic dance training), Group II acted as Experimental Group II (Suryanamaskar) Group III acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Forty five school children from Kerala state, India was selected as subjects at random and their ages ranged from 12 to 14 years. The subjects (N=45) were randomly assigned to three equal groups of fifteen subjects each. Pre test was conducted for all the subjects on selected low physical variables. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to aerobic dance training, Experimental Group II was exposed to suryanamaskar practices and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all the forty five subjects were tested on their physical variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant. Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

Results

Table I. Computation of analysis of covariance of mean of aerobic dance training, suryanamaskar practices and control groups on body weight

	Aerobic Dance Training	Suryanamaskar Practices	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	51.40	51.10	50.45	**BG**	7.12	2	3.56	0.72
				WG	207.47	42	4.94	
Post-Test Means	47.38	46.08	50.66	**BG**	167.64	2	83.82	23.05*
				WG	152.74	42	3.63	
Adjusted Post-Test eans	47.36	46.07	50.69	**BG**	166.53	2	83.27	22.42*
				WG	152.24	41	3.71	

An examination of table - I indicated that the pre test means of aerobic dance training, suryanamaskar practices and control groups were 51.40, 51.10 and 50.45 respectively. The obtained F-ratio for the pre-test was 0.72 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the aerobic dance training, suryanamaskar practices and control groups were 47.38, 46.08 and 50.66 respectively. The obtained F-ratio for the post-test was 23.05 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the aerobic dance training, suryanamaskar practices and control groups were 47.36, 46.07 and 50.69 respectively. The obtained F-ratio for the adjusted post-test means was 22.42 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on body weight. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-I.

Table II. The scheffe's test for the differences between the adjusted post test paired means on body weight

Adjusted Post-test means			Mean Difference	Required CI
Aerobic Dance Training	Suryanamaskar Practices	Control Group		
47.36	46.07	---	1.29	1.78
47.36	---	50.69	3.33*	
---	46.07	50.69	4.62*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of aerobic dance training with control group (3.33), suryanamaskar practices with control group (4.62). There was no significant difference between aerobic dance training and suryanamaskar practices (1.29) at 0.05 level of confidence with the confidence interval value of 1.78. The pre, post and adjusted means on body weight were presented through bar diagram for better understanding of the results of this study in figure-1.

Figure I. Pre post and adjusted post test differences of the, aerobic dance training, suryanamaskar practices and control groups on body weight

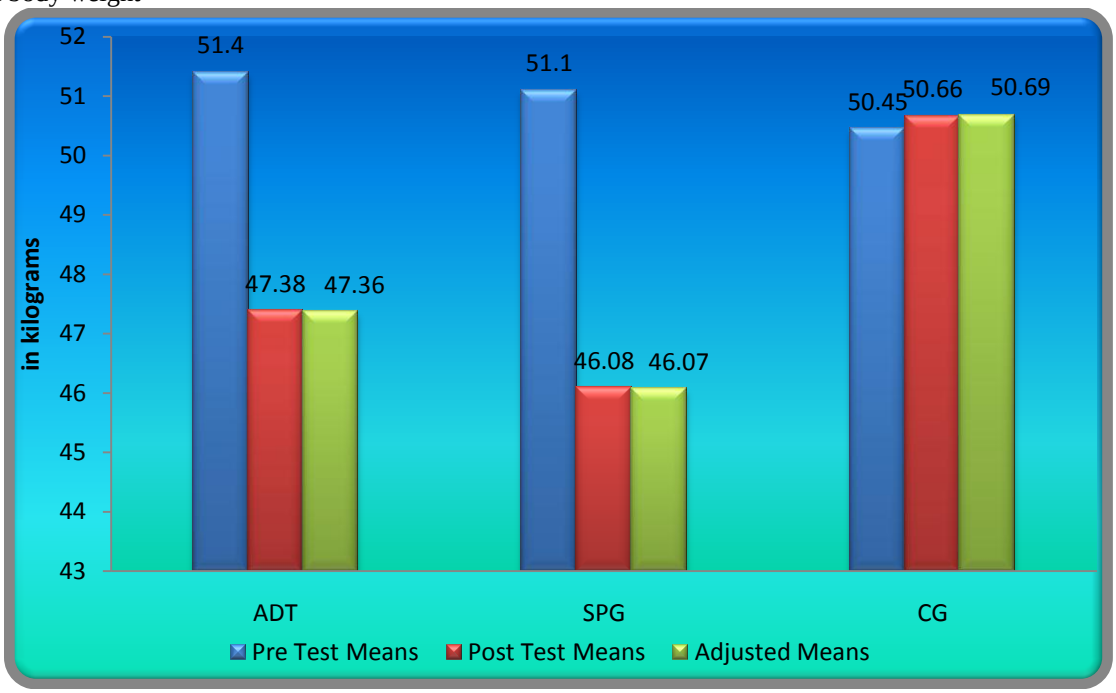


Table III. Computation of analysis of covariance of mean of aerobic dance training, suryanamaskar practices and control groups on strength

	Aerobic dance training	Suryanamaskar practices	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	8.40	8.33	8.06	**BG**	0.93	2	0.46	0.28
				WG	69.86	42	1.66	
Post-Test Means	11.73	11.46	8.26	**BG**	111.64	2	55.82	26.76*
				WG	87.60	42	2.08	
Adjusted Post-Test Means	11.69	11.44	8.31	**BG**	105.10	2	52.55	25.97*
				WG	82.96	41	2.02	

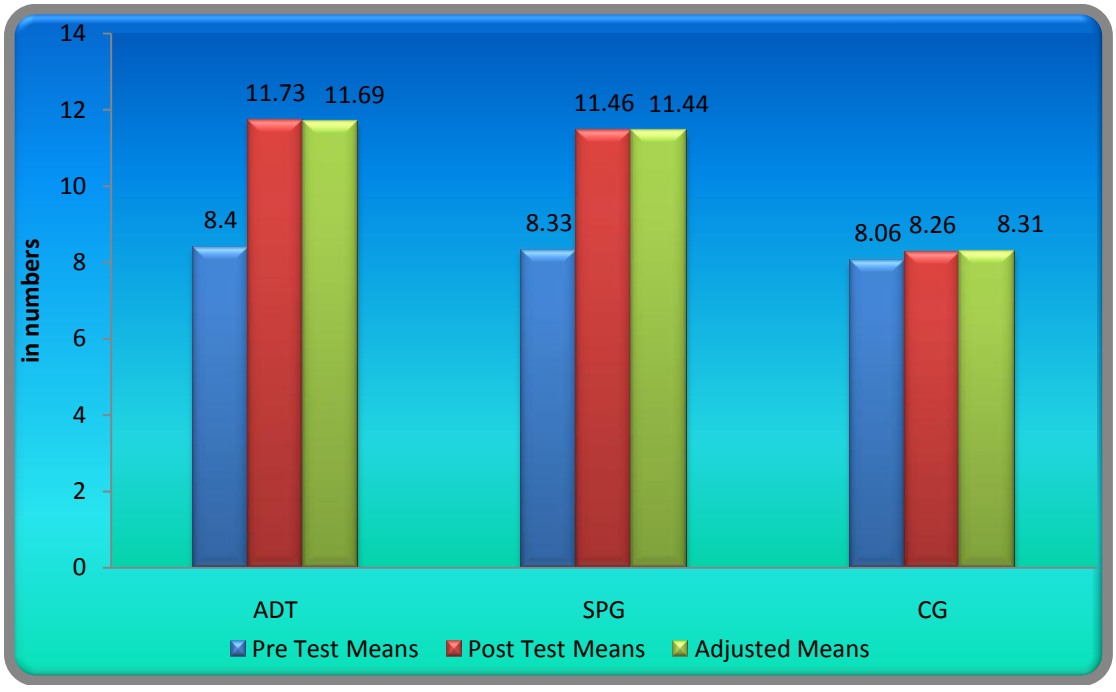
An examination of table - III indicated that the pre test means of aerobic dance training, suryanamaskar practices and control groups were 8.40, 8.33 and 8.06 respectively. The obtained F-ratio for the pre-test was 0.28 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the aerobic dance training, suryanamaskar practices and control groups were 11.73, 11.46 and 8.26 respectively. The obtained F-ratio for the post-test was 26.76 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the aerobic dance training, suryanamaskar practices and control groups were 11.69, 11.44 and 8.31 respectively. The obtained F-ratio for the adjusted post-test means was 25.97 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on strength. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table IV.

Table IV. The scheffe's test for the differences between the adjusted post test paired means on strength

Adjusted Post-test means			Mean Difference	Required CI
Aerobic Dance Training	Suryanamaskar Practices	Control Group		
11.69	11.44	---	0.25	1.31
11.69	---	8.31	3.38*	
---	11.44	8.31	3.13*	

The multiple comparisons showed in Table IV proved that there existed significant differences between the adjusted means of aerobic dance training with control group (3.38), suryanamaskar practices with control group (3.13). There was no significant difference between aerobic dance training and suryanamaskar practices (0.25) at 0.05 level of confidence with the confidence interval value of 1.31. The pre, post and adjusted means on strength were presented through bar diagram for better understanding of the results of this study in figure-II.

Figure II. Pre post and adjusted post test differences of the, aerobic dance training, suryanamaskar practices and control groups on strength



Conclusions

1. The aerobic dance training group had shown significant improvement in all the selected low physical variables among school children of Kerala state after undergoing aerobic dance training for a period of twelve weeks.
2. The suryanamaskar practices group had shown significant improvement in all the selected low physical variables among school children of Kerala state after undergoing the suryanamaskar practices for a period of twelve weeks.
3. The experimental training groups had shown better performance on physical variables than the control group.

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