EFFECT OF HATHA YOGA AND AEROBIC DANCE PRACTICE ON SELECTED SPEED OF ADOLESCENT BOYS

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INTRODUCTION

Yoga is a science of life which helps man to attain their highest potential and highest state of consciousness. The origin of hatha yoga developed in India. In Sanskrit 'Ha' means 'Sun' and 'Tha' means 'Moon'. 'Hatha' means 'forceful' implying that powerful work must be done to purify the body. Yoga means to yoke, or to join two things together, hence hatha yoga is meant to join together, Sun energy with the moon energy, thus producing balance and greater power in an individual. It is the branch of yoga which concentrates on physical health and mental well being. Hatha yoga uses bodily postures (Asanas) with the goal of bringing about a sound health body and clear, peaceful mind. Aerobic literally means, 'with oxygen', and refers to the use of oxygen in muscles energy-generating process. This exercise is a fabulous workout that not only helps in maintaining someone fitness level, nut also makes their heart stronger. It involves some motor fitness responses such a speed and endurance. There are distinct forms of aerobics like cycling, biking, jogging, running, swimming, is a fun way to get fit. Aerobic dance is a popular exercise in adolescent pupil. In this article an attempt has been made to observe the improvement occur in the motor fitness variables following aerobic and yoga practices among the adolescent boys.

PURPOSE OF THE STUDY

The purpose of the Study was follows :

- To find out the impact of yoga and aerobic dance practice of adolescence boys.
- To observe the changes if any in speed following the yoga and aerobic dance practices.

METHODOLOGY

The total subjects were one hundred and twenty (120) selected from the school of Rabindra Vidyapith High School and age ranging from 12–16 years. All the subjects possessed sound physique. All the subjects were divided into four boys groups i.e. Yoga, aerobic dance, combined and control groups.

a) Practice Schedule:

The total period of treatments was 6 weeks and each group practiced three days in a week and duration was 30 minutes which supervised exercise program for experimental subjects and control group continued usual activity. The subjects practiced the Asanas and Pranayamas.

Yoga Group: Practiced Tadasana, Tratoch, Chakrasana, Surya Namaskar, Sarbangasana, Halasana & Paschimothanasana and Pranayams, Nadi Sodhana, Kapalbhati, Bhamari, Yoga Nidra.

Aerobic Dance Group: Practiced aerobic dance with music.

Combined Group: Practiced Yoga 15 min. / day and aerobic dance 15 min. / day approximately.

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Control Group: The control group subjects were continued usual activity.

(b) Criteria measured:

Age, height and weight were measured by school record, Stadiometer and weighing machine accordingly. On the other hand motor fitness variable such as speed was measured by electronic digital stop watch respectively.

Statistical Technique Used

For statistical analysis standard procedures have been adopted. Mean and SD were first computed. Then pretest and post test data were analysed by paired 't' test method (Garrett, 1981). For obtaining the significant differences ANCOVA method (Garrett, 1981) was adopted.

RESULT AND DISCUSSION

For testing the differences between means scores selected motor fitness variables of Yoga Group, aerobic dance group, combined group and control group of subjects. The level of significance were at 0.05 and 0.01 of confidence. The mean and SD of personal data and motor fitness variables data were recorded as Table 1(a) and 1(b).

These two tables were given below:

TABLE – 1(A)
PRE- TEST: MEAN ± SD OF YOGA, AEROBIC DANCE, COMBINED AND CONTROL GROUP

	Yoga Group M ± SD	Aerobic Dance Group M ± SD	Combined Group M ± SD	Control Group M ± SD
Personal Data				
Age	13.77 ± 1.25	138 ± 0.81	14.67± 0.99	14.90 ± 92
Height	141.71 ± 6.10	149.37 ± 4.43	151.37 ± 9.08	150.30 ± 8.54
Weight	38.67 ± 5.96	42.33 ± 4.72	42.70 ± 7.00	40.77 ± 5.16
Motor Fitness Variable				
Speed	7.57 ± 0.51	7.52 ± 0.47	6.95 ± 0.53	7.00 ± 0.54

TABLE – 1(B)
POST TEST: (MN ± SD) OF YOGA, AEROBIC DANCE, COMBINED AND CONTROL GROUP

	Yoga gr. Mn ± SD	Aerobic Dance gr. Mn ± SD	Combined gr. Mn ± SD	Control gr. Mn ± SD
Personal Data				
Weight	37.13 ± 5.48	40.20 ± 4.24	41.70 ± 6.22	41.33 ± 5.40
Motor Fitness Variable				
Speed	7.23 ± 0.34	7.17 ± 0.27	6.29 ± 0.48	6.93 ± 0.52

Personal Data :

The age, height and weight of the subjects had been considered as personal variable.

Age : Mean scores and standard deviation of four groups of age were 13.77 ± 1.25, 13.8 ± 0.81, 14.67 ± 0.99 and 14.90 ± 0.92 years respectively in Table – 1(a).

Height : Mean scores and standard deviation of four groups of height were 141.70 ± 6.10, 149.37 ± 4.43, 151.37 ± 9.08 and 150.30 ± 8.54 cm. respectively in Table–1(a).

Weight : Mean scores and standard deviation of four groups of weight in pre-test were 38.67 ± 5.96, 42.23 ± 4.72, 42.70 ± 7.00 and 40.77 ± 5.16 kg respectively in Table–1(a) and Fig. No. 1.

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Post test weights mean and SD were 37.13 ± 5.48, 40.20 ± 4.24, 41.70 ± 6.22 and 41.33 ± 5.40 kg respectively in Table –1(b) and Fig. 1.
After completion of the training programme mean scores of weight of all experimental groups were decreased slightly.

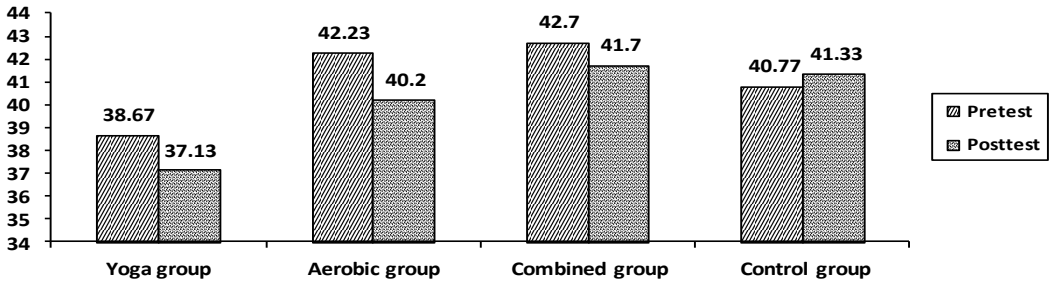

Fig. 1. Pretest & Posttest Means of Weight of Four Groups

Motor Fitness Variables
Speed is the motor fitness variable in this study. The test procedure was conducted in this study which have been discussed and mentioned by various eminent experts authors and researcher in the profession of physical education. (Mathews, 1968, Clarke, 1976, Barrow and McGee, 1979 and Verducci, 1980) etc.

Speed :

TABLE – 2
ANALYSIS OF VARIANCE (ANOVA) FOR SPEED AMONG THE FOUR GROUPS

	Source of Variation	Ss	df	Ms	F
Pre Test	Between Gr.	9.99	3	3.33	12.65
	Within Gr.	30.55	116	.26	
	Total	40.54	119		
Post Test	Between Gr.	16.69	3	5.56	32.22
	Within Gr.	20.03	116	.17	
	Total	36.72	119		

$F_{0.05}$ = 2.68, $F_{0.01}$ = 3.96 F is sig. at both levels

TABLE – 3
ANALYSIS OF COVARIANCE OF SPEED OF FOUR GROUPS

Source of Variation	df	$SS_{x.y}$	$SS_{y.x}$	$MS_{y.x}(V_{y.x})$	$F_{y.x}$	$SD_{y.x}$
Among Gr. Means	3	10.72	6.54	2.18	35.15	
Within Gr. SS	115	19.85	7.13	0.06		0.25
Total	118	30.57				

$F_{0.05}$ = 2.68, $F_{0.01}$ =3.96. F is significant at both levels

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TABLE – 4
SIGNIFICANCE OF DIFFERENCES AMONG ADJUSTED Y MEANS OF SPEED

Variables	SEd	df	Diff. Adjusted Means	Significant at 0.05 or 0.01
Yoga vs. Aerobic dance Group	0.05	115	0.02	NS
Yoga vs. Combined Group	0.06	115	0.53**	0.01
Yoga vs. Control Group	0.06	115	0.08	NS
Aerobic dance vs. Combined Group	0.06	115	0.51**	0.01
Aerobic dance vs. Control Group	0.06	115	0.10	NS
Combined vs. Control Group	0.06	115	0.61**	0.01

**Significance at 0.01 level, NS = Not significant.

TABLE – 5
REPRESENTS THE ADJUSTED Y MEANS OF SPEED

Groups	Mean X	Mean Y	Mean Y.X (adj.)
Yoga	7.57	7.23	7.02
Aerobic dance	7.52	7.17	7.00
Combined Y & A	6.95	6.29	6.49
Control	7.00	6.93	7.10

Pre test – X, Post test – Y.

Mean scores of speed was decreased in all the groups.

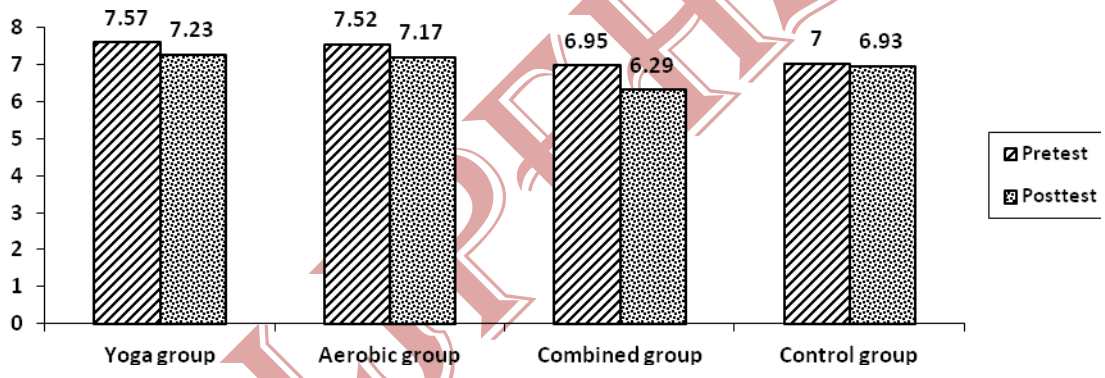

Fig. 2. Pretest & Posttest Means of Speed of Four Groups

From the Table 1(a) & (b) it was found that mean ± SD of speed before training of all the groups were 7.57 ± 0.51, 7.52 ± 0.47, 6.95 ± 0.53, 7.0 ± 0.54 and after training were 7.23 ± 0.34, 7.17 ± 6.29 ± 0.48, 6.93 ± 0.52 respectively. Participating in yoga and aerobic dance programme all the experimental groups decreased their speed. Since all the mean scores of speed were not equal, analysis of variance was computed in Table 2 to final the significant differences among the four means. It showed that F value was significant at 0.01 level. ANCOVA (Table 3) was done to find out the significant effect after participating the exercise programme among the groups. So treatment had positive effect on the groups. So treatment had positive effect on the groups. In post test of speed of combined group was better than other three groups. After six weeks exercise programme speed was decreased Yoga, aerobic dance and control group in respect to combined group at 0.01 level of significance. But combined group showed better result like pre test. Harre (1982), and Fox (1981) and Bandopadhyay (1992) showed running speed may be improved through training. Nunnay (1960) found improvement in speed by circuit training method.

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CONCLUSION

On the basis of the results and discussions specific conclusions may be drawn.
Mean scores of speed of all the groups were decreased after exercise. It was indicated that speed of yoga vs. combined; aerobic dance vs. combined and combined vs. control boys groups decreased in 0.01 level of significance. So combined boys group was better than other boys groups.

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