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Dr. Sanjoy Mitra
Assistant Professor,
Ramakrishna Mission
Brahmananda College of
Education, Rahara, Kolkata,
West Bengal, India

Effect of hatha yoga and aerobic dance practice on selected intelligence variable of adolescent boys

Dr. Sanjoy Mitra

Abstract

Yoga is an ancient Indian Philosophy. The purpose of the study was to evaluate psychological response, to find out the changes of intelligence by the following Yoga and aerobic dance practices. The total subjects were 120 divided into four groups and their age ranges from 12–16 years. The duration of total practice period were 6 weeks (3 days in a week for 30 minutes). Pre test and post test data were analyzed by paired 't' test method. For obtaining the significant differences ANCOVA method was adopted (Garrett, 1981). The organised Yoga and aerobic dance program definitely improved their performance in selected psychological potentialities.

Keywords: Yoga, aerobic dance, combined and control group, intelligence

Introduction

Yoga has a great antiquity, long tradition and is a result of thousand of years of careful and systematic exploration by the long time of sages and Yogis on the basis of their meticulous observations and personal experiences. Yoga is science of life which helps man to attain his highest potential and highest state or consciousness. It has various psychological techniques involving asanas, Pranayamas etc. The term Yoga is applied to the attainment of highest aim, i.e. integration of personality as well as the various methods and techniques used for the fulfilment of that aim.

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 (masculine, active) energy with the moon (feminine, receptive) 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 healthy body and clear, peaceful mind.

It work to make the spine supple and to promote circulation of all organs, glands and tissues. Hatha yoga postures also stretch and align the body promoting balance and flexibility. Aerobic exercises such as aerobic dance, is a fun way to get fit. It combines fat-burning aerobic movements. music. In this article an attempt has been made to observe the improvement occur in the psychological variables following aerobic and Yoga practices among the adolescent. Aerobic dance and Hatha yoga have to produce improvements in psychological well being. All ages can benefit from aerobic dance. Aerobic dance is a popular exercise in adolescent pupil.

Purpose of the Study

The purpose of the study was as follows:

- i) To observe the impact of hatha yoga and aerobic dance practice of adolescent boys.
- ii) To find out the changes if any in intelligence, following the yoga and aerobic practices.

Methodology

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

Corresponding Author:
Dr. Sanjoy Mitra
Assistant Professor,
Ramakrishna Mission
Brahmananda College of
Education, Rahara, Kolkata,
West Bengal, India

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. The subjects were practice the Asanas & pranayamas 30 minutes / day & thrice a week Asanas were Tadasana, Tratayaka Chakrasana, Surja namaskar, Sarbagasana, Halasana etc. and Pranayamas were Bhastrika, Kapal bhati, Bhamari etc. Aerobic dance group with music also were practiced thrice a week and 30 mins. / day.

b) Criteria measured

Age, height and weight were measured by school record, stadiometer and weighing machine accordingly. Intelligence

was measured by Raven (1938) [11], Progressive Matrices, For statistical analysis standard procedures have been adapted. Mean and SD were first computed. Then pretest and post test data were analyzed by paired 't' test method (Garrett, 1981) [6]. For obtaining the significant differences ANCOVA method (Garrett, 1981) [6] was adopted.

Result and Discussion

For testing the differences between mean scores selected psychological variables of Hatha Yoga Group, Aerobic Dance Group, Combined Group (Hatha Yoga and Aerobic Dance) as Control Group of subjects. The level of significance were at 0.05 and 0.01 of confidence. The mean and SD of their personal data (age, height and weight) were recorded on table 1(a) & 1(b).

Table 1 (a): Pretest: (Mean \pm SD) of Yoga, aerobic dance, combined and control group variables

	Yoga Gr. Mean \pm SD	Aerobic Dance Gr. Mean \pm SD	Combined Gr. Mean \pm SD	Control Gr. Mean \pm SD
Personal Data				
Age	13.77 \pm 1.25	13.8 \pm 0.81	14.67 \pm 0.99	14.90 \pm 0.92
Height	141.70 \pm 6.10	149.37 \pm 4.43	151.3 \pm 9.08	150.30 \pm 8.54
Weight	38.67 \pm 5.96	42.23 \pm 4.72	42.70 \pm 7.00	40.77 \pm 5.16
Psychological Variable				
Intelligence	30.37 \pm 4.60	28.97 \pm 5.41	26.97 \pm 4.50	27.30 \pm 5.75

Table 1(b): Posttest: (Mean \pm SD) of Yoga, aerobic dance, combined and control group variables

	Yoga Gr. Mean \pm SD	Aerobic Dance Gr. Mean \pm SD	Combined Gr. Mean \pm SD	Control Gr. Mean \pm SD
Personal Data				
Weight	37.13 \pm 5.48	40.20 \pm 4.24	41.70 \pm 6.22	41.33 \pm 5.40
Psychological variable				
Intelligence	33.80 \pm 4.18	32.03 \pm 5.96	29.67 \pm 4.34	27.77 \pm 5.12

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 \pm 1.25, 13.8 \pm 0.81, 14.67 \pm 0.99 and 14.90 \pm 0.92 years respectively in Table – 1(a).

Height: Mean scores and standard deviation of four groups of height were 141.70 \pm 6.10, 149.37 \pm 4.43, 151.37 \pm 9.08 and 150.30 \pm 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 \pm 5.96, 42.23 \pm 4.72, 42.70 \pm

7.00 and 40.77 \pm 5.16 kg respectively in Table–1(a) and Fig. No. 1. Post test weights mean and SD were 37.13 \pm 5.48, 40.20 \pm 4.24, 41.70 \pm 6.22 and 41.33 \pm 5.40 kg respectively in Table No.–1(b) and Fig. 1. After completion of the training programme mean scores of weight of all experimental groups were decreased slightly.

Psychological Variable

In my study the psychological variable was Intelligence

Intelligence**Table 2:** Analysis of Variance (ANOVA) for intelligence among the four groups

	Sources of Variation	Ss	df	Ms	F
Pre Test	Between groups	223.60	3	74.53 25.94	2.87
	Within groups	3009.20	116		
	Total	3232.80	119		
Post Test	Between groups	630.17	3	210.06 24.52	8.57
	Within groups	2843.80	116		
	Total	3473.97	119		

$$F_{0.05} = 2.68, F_{0.01} = 3.96$$

In Pre-test F is significant at 0.05 level & post test F is significant of both levels.

Table 3: Analysis of Covariance (ANCOVA) for intelligence among the 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	346.80	173.20	57.73	26.02	1.49
Within Gr. SS	115	2791.00	255.18	2.22		
Total	118	3137.80	428.37			

Table 4: Significance of difference among adjusted Y Means of intelligence

Variables	SE _d	df	Diff. Adjusted Mean	Sig. at 0.05 or 0.01
Yoga vs. Aerobic dance Gr.	0.38	115	0.47	NS
Yoga vs. Combined Gr.	0.38	115	0.98*	0.05
Yoga vs. Control Gr.	0.38	115	3.19**	0.01
Aerobic dance vs. Combined Gr.	0.38	115	0.51	NS
Aerobic dance vs. Control Gr.	0.38	115	2.72**	0.01
Combined vs. Control Gr.	0.38	115	2.21**	0/01

*Sig. at 0.05 level, **Sig. at 0.01 level, NS is Non-significant.

From the Table No. 1(a) & 1(b) it was found that mean score and SD of intelligence before training of all the groups were 30.37 ± 4.60 , 28.97 ± 5.41 , 26.97 ± 4.50 , 27.30 ± 5.75 and after training were 33.80 ± 4.18 , 32.03 ± 5.96 , 29.67 ± 4.34 , 27.27 ± 5.12 .

Participating in yoga and aerobic dance programme all the experimental groups increased their intelligence. Since all the mean scores of intelligence were not equal, analysis of variance was computed in Table No. 2 to find the significant differences among the four means. It was observed from the Table No. 2 that the in pre test F value was significant at 0.05 level and post test was 0.01 levels. ANCOVA was done to find out the significant effect after participating the exercise programme among the groups. It was significant at both levels. It was found in Table No. 4 that all the experimental groups increased at 0.01 levels of confidence compared to control group and yoga vs. combined group increased at 0.05 level of confidence. After six weeks exercise programme intelligence level increased in all the experimental groups as compared to control group at 0.01 level of significance. In the present study treatment had positive effect on the groups.

Intelligence

- i) Intelligence level increased in all the experimental groups in comparison with the control group at 0.01 level confidence participating yoga and aerobic dance programme.
- ii) In intelligence Yoga vs. combined group increased at 0.05 level.

The organized Yoga and aerobic dance program in the girl subjects participated for about six is definitely improved their performance in selected psychological potentialities.

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