



EFFECTS OF DIFFERENT MODES OF YOGA PRACTICE ON STRENGTH ENDURANCE FLEXIBILITY AND ANXIETY

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ABSTRACT

The purpose of the present study was to find out the effect of different combination of yogic technique on strength endurance, flexibility and anxiety among diploma in elementary education students. For this purpose, 45 women students studying I and II year in the District Institute of Education and Training, Krishnagiri were selected as subjects. The age of the subjects were ranged from 19 to 21 years. They were divided into three equal groups, each group consisted of fifteen subjects, in which experimental group - I underwent asana and pranayama with relaxation technique, experimental group - II underwent asana and pranayama with meditation technique and group - III acted as control that did not participate in any special activities apart from their regular curricular activities. The training period for the study was five days (Monday to Friday) in a week for twelve weeks. Prior and after the experimental period, the subjects were tested on strength endurance, flexibility and anxiety. Strength endurance was assessed by conducting sit-ups test, flexibility was assessed by sit and reach test and anxiety was tested by the help of SCAT testing tool. The Analysis of Covariance (ANCOVA) was applied to find out any significant difference between the experimental groups and control group on selected criterion variables. The result of the study shows that the asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group were increased the strength endurance and flexibility and decreased the anxiety significantly. It was concluded from the results of the study that asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group has bring positive changes in strength endurance, flexibility and anxiety as compare to the control group. Moreover it was also concluded that there was no significant difference was found between the experimental groups on all criterion variables.



KEYWORDS : Asana and Pranayama with Relaxation Technique Group, Asana and Pranayama with Meditation Technique Group, Strength Endurance, Flexibility, Anxiety.

INTRODUCTION

Yoga is not an ancient myth buried in oblivion. It is the most valuable in oblivion. It is the essential need of today and the culture of tomorrow" - **Swami Satyananda Saraswathi**.

Yoga is one of the most ancient cultural heritages of India. The word *yoga* in Sanskrit means "to unite" and so *yoga* can be said to connote a unitive discipline. [1] Yoga is one of the most ancient cultural heritages of India. The word *yoga* in Sanskrit means "to unite" and so *yoga* can be said to connote a unitive

discipline. In this sense, it is an exercise in moral and mental cultivation that generates good health (*arogya*), contributes to longevity (*chirayu*), and the total intrinsic discipline culminates into positive and perennial happiness and peace. [2] Yoga is one of the orthodox systems of Indian philosophy. It was collated, coordinated and systematized by Patanjali in his classical work, the Yoga Sutras, which consists of 185 terse aphorisms. Yoga is a complete science of life that originated in India many thousands of years ago. It is the oldest system of personal development in the world, encompassing body, mind and spirit. [3]

Yoga postures (known as asanas), helps to stretch and relax the muscles and skeletal system. The physical release through these soothing movements can help create a sense of calmness and well-being. [4] Asanas induce increased awareness of physical and psychological processes by controlled stretching, contraction, and relaxation of various muscles, coordinated through balance and holding of postures. Pranayama involves the manipulation of breathing and an increased awareness of pressures within the chest and abdomen. Kriyas are purifying processes which eliminate toxins from the body. Finally, meditation practice increases awareness of one's mental functioning. [5]

Recent scientific studies of the effects of yoga and meditation on health validates its ability to improve virtually every aspect of our functioning brain function, hormonal function, sleep, mood, balance, etc. More active practices followed by relaxing ones lead to deeper relaxation than relaxing practices alone, documented by research from Swami Vivekananda yoga research foundation near Bangalore city and possibility of neuroplasticity bringing about changes in the hypo-pituitary-pancreatic axis. [6] The improvement in the lipid levels after yoga could be due to increased hepatic lipase and lipoprotein lipase at cellular level, which affects the metabolism of lipoprotein and thus increase uptake of triglycerides by adipose tissues. [7, 8] Direct stimulation of the pancreas by the postures can rejuvenate its capacity to produce insulin. [9] Regeneration of pancreatic beta cells could occur by yoga exercises that promote blood circulation in the region of the pancreas and yoga asanas that stimulate the meridian of pancreas also could assist in some diabetic patients. [10] Pranayama practices, stretches the lung tissue producing inhibitory signals from action of slowly adapting receptors and hyperpolarizing currents. These inhibitory signals coming from cardio-respiratory region involving vagi are believed to synchronize neural elements in the brain leading to changes in the autonomic nervous system; and a resultant condition characterized by reduced metabolism and parasympathetic dominance. [11]

METHODOLOGY

Forty five women students studying I and II year in the District Institute of Education and Training, Krishnagiri of Tamil Nadu were selected as subjects. The age of the subjects were ranged from 19 to 21 years. They were divided into three equal groups, each group consisted of fifteen subjects, in which experimental group - I underwent asana and pranayama with relaxation technique, experimental group - II underwent asana and pranayama with meditation technique and group - III acted as control that did not participate in any special activities apart from their regular curricular activities. Different techniques of yoga practices were conducted five days (Monday to Friday) per week for twelve weeks. The researcher consulted with the yoga experts and selected the following variables as criterion variables: 1) strength endurance, 2) flexibility and 3) anxiety. Strength endurance was assessed by conducting sit-ups test, flexibility was assessed by sit and reach test and anxiety was tested by the help of SCAT testing tool. For the purpose of collection of data the subjects were asked to report at early morning, one day prior and one day after experimental period. ANCOVA was applied to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as appropriate.

DATA ANALYSIS**Table 1: ANCOVA on Selected Criterion Variables among Exercise Groups and Control Group**

Variable Name	Group Name	Asana Pranayama and Relaxation Technique Group	Asana Pranayama and Meditation Group	Control Group	F
Strength Endurance (in Nos.)	Pre-test Mean \pm S.D	16.00 \pm 0.76	16.07 \pm 1.10	16.09 \pm 0.88	0.026
	Post-test Mean \pm S.D.	18.53 \pm 1.36	18.33 \pm 1.45	16.13 \pm 1.55	12.58*
	Adj. Post-test Mean	18.584	18.308	16.108	26.32*
Flexibility (in Centimeters)	Pre-test Mean \pm S.D	18.80 \pm 1.42	18.60 \pm 1.12	18.70 \pm 1.40	0.114
	Post-test Mean \pm S.D.	20.47 \pm 1.40	21.07 \pm 0.96	18.73 \pm 1.44	13.68*
	Adj. Post-test Mean	20.374	21.113	18.780	27.34*
Anxiety (in Points)	Pre-test Mean \pm S.D	17.27 \pm 1.16	16.93 \pm 1.28	16.67 \pm 1.11	0.962
	Post-test Mean \pm S.D.	15.13 \pm 1.13	14.80 \pm 1.27	16.80 \pm 1.21	11.95*
	Adj. Post-test Mean	14.874	14.818	17.040	49.05*

*Significant at 0.05 level.

Table-1 shows that pre F-ratio of asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group and control group on strength endurance were 0.026, which was insignificant at 0.05 level of confidence. The post test and adjusted post test mean F-ratio values of experimental groups and control group was 12.58 and 65.691, which were significant at 0.05 level of confidence. The pre and post test means F-ratio of asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group and control group on flexibility was 0.114, which was insignificant and 13.68, which was significant at 0.05 level of confidence. The adjusted post test mean F-ratio value of experimental groups and control group was 27.34, which was significant at 0.05 level of confidence. The pre and post test means F-ratio of asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group and control group on anxiety were 0.962 which is insignificant at 0.05 level of confidence. The post and adjusted post test mean F-ratio value of experimental groups and control group was 11.95 and 49.05, which was significant at 0.05 level of confidence.

Table 2: Scheffé S Test for the Difference between the Adjusted Post-Test Mean of Selected Criterion Variables

Adjusted Post-test Mean on Strength Endurance				
Yogasana Practice Group	Aerobic Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level
18.584		16.108	2.475*	0.951
18.584	18.308		0.275	0.951
	18.308	16.108	2.200*	0.951

Adjusted Post-test Mean on Flexibility					
Yogasana Practice Group	Aerobic Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level	
20.374		18.780	1.594*	0.820	
20.374	21.113		0.739	0.820	
	21.113	18.780	2.333*	0.820	
Adjusted Post-test Mean on Anxiety					
Yogasana Practice Group	Aerobic Exercise Group	Control Group	Mean Difference	Confidence interval at .05 level	
14.874		17.040	2.166*	0.64	
14.874	14.818		0.56	0.64	
	14.818	17.040	2.222*	0.64	

* Significant at 0.05 level.

Table-2 depicts that the Scheffé S Test for the difference between adjusted post-test mean on strength endurance of asana and pranayama with relaxation technique group and control group (2.475), asana and pranayama with meditation technique group and control group (2.20) which were significant at .05 level of confidence, but there was no significant difference between the training group (0.275). There was a significant difference on flexibility between asana and pranayama with relaxation technique group and control group (1.594), asana and pranayama with meditation technique group and control group (2.333) and there was insignificant difference was occurred between the training groups (0.739). There was a significant difference on anxiety between asana and pranayama with relaxation technique group and control group (2.166), asana and pranayama with meditation technique group and control group (2.222) which was significant at 0.05 level of confidence after the respective training programme and there was no significant difference was found between the training groups (0.56).

CONCLUSIONS

The experimental groups such as, asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group have achieved a significant improvement in selected criterion variables such as strength endurance, flexibility and a significant reduction in anxiety when compared with the control group. It was also found that there was no significant difference was found between the asana and pranayama with relaxation technique group and asana and pranayama with meditation technique group.

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