



## EFFECTS OF AEROBIC TRAINING AND PRANAYAMA ON SELECTED MOTOR FITNESS AND PSYCHOLOGICAL VARIABLES ON COLLEGE MEN

Dr. G. SURESH KUMAR

*Physical Director, Periyar Centenary Polytechnic College, Thanjavur, Tamilnadu, India.*

### ABSTRACT

*The purpose of the study was to find out the Effects of aerobic training and pranayama on selected motor fitness and psychological variables on college men. To achieve this purpose of the study sixty men students were selected. To achieve this purpose of the study, sixty men students of Department of Physical Education, Thanthai Hans Roever College from Perambalur, Tamil Nadu, India were tested. They were divided into three equal groups of each twenty subjects. It was conducted by pranayama training and aerobic training each namely pranayama training group, aerobic training group and control group. The group I pranayama training group, group II aerobic training group conducted test for three days per week for twelve weeks and group III acted as control. Who did not underwent any special training programme apart from their regular day today physical education curriculum. The following motor fitness and Psychological variables namely speed and Achievement Motivation were selected as criterion variables. The speed was assessed by (50 meters run) and Achievement Motivation was assessed by using standard questionnaire, Sports Competition Achievement Motivation. All the subjects of three groups were tested on selected criterion variables at prior to and immediately after the training programme as pre and post test selection. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the groups on each selected criterion variables separately. In all the cases .05 level of confidence was fixed to test the significance, which was considered as appropriate. The results of the study revealed that there was a significant difference between pranayama training group, aerobic training group and control group on selected criterion variables such as speed and Achievement Motivation. And there was an improvement as per selected criterion variables namely speed and Achievement Motivation with respect to pranayama training, aerobic training.*

**KEYWORDS:** Aerobic Training, Pranayama, Motor Fitness, Psychological, College Men.

### INTRODUCTION

Aerobics and step aerobics are more efficient method to decrease the percentage of body fat to attain the other metabolic benefits of fitness. It is also a very good way to develop musculoskeletal fitness while building strength, flexibility, balance and coordination. Aerobic exercise has a positive effect on stamina, blood pressure, weight, sleep patterns, energy levels, lipid profiles, and can reduce the risk of cardio vascular diseases, diabetes and certain type of cancer.

Regular and purposive aerobic exercises improve the heart's pumping efficiency and reduce the resting heart rate by strengthening the heart muscles. Strengthen the muscles involved in respiration to facilitate the flow of air in and out of the lungs, tone muscles throughout the body which can improve overall circulation and reduce blood pressure and increase the total number of red blood cells in the body, to facilitate transport of oxygen throughout the body, regular vigorous aerobic activity can stimulate bone growth, as well as reducing the risk of osteoporosis for both men and women (Donatella). Pranayama means control and regulation of breath. "Prana" is Sanskrit word which means 'vital force', "Ayana", means the control of the Prana so Pranayama means the control of vital force (Prana) by concentration and regulated breathing. Prana

is the vital power or force which is motivating every element on the earth and is the origin of the force of thought. there is a deep affinity between prana and mental force, between mental force and intellect, between intellect to soul, and between soul and God. The control of Prana through Pranayama that each part of the body can be filled with Prana. Once, one is capable of performing it, one is matter of body and can dominate illness and suffering. Prana is accumulated where our mind is concentrated. As a wind drives smoke and impurities from the atmosphere, pranayama drives away the impurities of the body and mind.

Pranayama is a Sanskrit word meaning "lengthening of the prana or breath". The word is composed of two Sanskrit words, Prāna, life force, or vital energy, particularly, the breath, and "āyāma", to lengthen or extend. It is often translated as control of the life force (prana). When used as a technical term in yoga, it is often translated more specifically as "breath control". Literal translations include A. A. Macdonell's "suspension of breath" and I. K. Taimni's "regulation of breath".

### METHODOLOGY

The purpose of the study was to find out the Effects of aerobic training and pranayama on selected

motor fitness and psychological variables on college men. To achieve this purpose of the study sixty men students were selected. To achieve this purpose of the study, sixty men students of Department of Physical Education, Thanthai Hans Roever College from Perambalur, Tamil Nadu, India were tested. They were divided into three equal groups of each twenty subjects. It was conducted by pranayama training and aerobic training each namely pranayama training group, aerobic training group and control group. The group I pranayama training group, group II aerobic training group conducted test for three days per week for twelve weeks and group III acted as control. Who did not underwent any special training programme apart from their regular day today physical education curriculum. The following motor fitness and Psychological variables namely speed and Achievement Motivation were selected as criterion variables. The speed was assessed by (50 meters run) and Achievement Motivation was assessed by using standard questionnaire, Sports Competition Achievement Motivation. All the subjects of three groups were tested on selected criterion variables at prior to and immediately after the training programme as pre and post test selection. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the groups on each selected criterion variables separately. In all the cases .05 level of confidence was fixed to test the significance, which was considered as appropriate.

#### TRAINING PROGRAMME

During the training period, the subjects were selected at random and were into three groups. Group I pranayama training, group II aerobic training for three

days per week (alternative days) for twelve weeks. Every day the workout lasted for 45 to 60 minutes approximately including warming up and warming down periods. And group III who acted as control who instructed not to participate in any strenuous physical exercises and specific training throughout the training period. However, they performed activities as per their curriculum. The subjects underwent the training program as per the schedules under the supervision of the researcher in the morning time. All the subjects involving in the training programs were questioned about their status throughout the training period. None of them reported injury. However, muscle soreness and fatigues were reported in the early weeks, which subsided later.

#### STATISTICAL ANALYSIS

The data was collected from three groups at prior to and after completion of the training period on selected criterion variables were statistically examined for significant difference if any, by applying analysis of covariance (ANCOVA). The Scheffe's post hoc test was also applied to know the significant difference between groups. The obtained 'F' ratio was also significant. In all cases .05 level of confidence was utilized to test the significance.

#### SPEED

The analysis of covariance of the data obtained for speed of pre-test and post-test for pranayama training group, aerobic training group and control group have been presented in Table I.

**TABLE – I**  
**ANALYSIS OF COVARIANCE OF THE DATA ON SPEED OF PRE AND POST TESTS SCORES OF PRANAYAMA TRAINING GROUP, AEROBIC TRAINING GROUP AND CONTROL GROUP (Scores in seconds)**

Test	PRANAYAMA	AEROBIC	CONTROL	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test Mean	7.03	7.08	7.06	Between	0.03	2	0.01	0.21
				Within	3.61	57	0.06	
Post Test Mean	6.95	6.79	6.96	Between	0.40	2	0.20	3.12
				Within	3.66	57	0.06	
Adjusted Post Test Mean	6.98	6.77	6.96	Between	0.53	2	0.26	12.10
				Within	1.23	56	0.02	
Mean	-0.07	-0.29	-0.10					

\* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 57 and 2 and 56 are 3.16 and 3.17 respectively).

Table I shows that the mean value of initial scores on pranayama group was 7.03, aerobic group was 7.08 and control group was 7.06. The final scores on pranayama group was 6.95, aerobic group was 6.79 and control group was 6.95. The differences were subjected

to statistical treatment and the obtained 'F' value on initial scores 0.21 proved that there was no significant difference at initial stage among the groups. This proved that the random assignment of the group was successful. The obtained 'F' value of 3.12 on final scores was less

than the required table value to be significant at .05. Considering the initial and final means, adjusted mean values were computed and subjected to statistical treatment. The obtained 'F' value of 12.10 was significant at .05 level as the obtained 'F' value was greater than the required table value of 3.16 to be

significant at .05 level. Since, three groups were compared, whenever the obtained 'F' ratio for adjusted post test was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in Table II.

**TABLE – II**  
**THE SCHEFFE'S TEST FOR THE DIFFERENCES**  
**BETWEEN PAIRED MEANS ON SPEED**  
(Scores in Seconds)

MEANS			Mean Differences	Confidence Interval Value
Pranayama	Aerobic	Control		
6.98	6.77		0.21*	0.12
6.98		6.96	0.02	0.12
	6.77	6.96	-0.19*	0.12

\*Significant at .05 level of confidence

The table II shows that the mean difference values between Pranayama training group and aerobic training group, Pranayama training group and control group, aerobic training group and control group, 0.21, 0.02 and -0.19 respectively on speed which were greater than the required confidence interval 0.12 significance. The results of this study showed that there was a significant difference between Pranayama training group and aerobic training group, Pranayama training group

and control group, aerobic training group and control group on speed.

#### ACHIEVEMENT MOTIVATION

The analysis of covariance of the data obtained for results on achievement motivation of pre-test and post-test for pranayama training group, aerobic training group and control group have been presented in table III.

**TABLE – III**  
**ANALYSIS OF COVARIANCE OF THE DATA ON ACHIEVEMENT MOTIVATION**  
**OF PRE AND POST TESTS SCORES OF PRANAYAMA TRAINING GROUP,**  
**AEROBIC TRAINING GROUP AND CONTROL GROUP**  
(Scores in Numbers)

Test	PRANAYAMA	AEROBIC	CONTROL	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
PRE TEST MEAN	13.25	12.15	11.65	BETWEEN	26.80	2	13.40	5.27*
				WITHIN	144.85	57	2.54	
POST TEST MEAN	13.50	14.30	12.95	BETWEEN	18.43	2	9.22	5.04*
				WITHIN	104.15	57	1.83	
ADJUSTED POST TEST MEAN	13.23	14.36	13.16	BETWEEN	18.06	2	9.03	5.54*
				WITHIN	91.24	56	1.63	
MEAN DIFF	0.25	2.15	1.30					

\* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 57 and 2 and 56 are 3.16 and 3.17 respectively).

Table III shows that the mean value of initial scores on pranayama group was 13.25, aerobics group was 12.15 and control group was 11.65. The final scores

on pranayama group was 13.50, aerobics group was 14.30 and control group was 12.95. The differences were subjected to statistical treatment and the obtained 'F'

value on initial scores 5.27 proved that there was significant difference at initial stage among the groups. The obtained 'F' value of 5.04 on final scores was greater than the required Table value to be significant at .05. Considering the initial and final means, adjusted mean values were computed and subjected to statistical treatment. The obtained 'F' value of 5.54 was significant

at .05 level as the obtained F value was greater than the required table value of 3.16 to be significant at .05 level. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table III.

**TABLE – IV**  
**THE SCHEFFE'S TEST FOR THE DIFFERENCES**  
**BETWEEN PAIRED MEANS ON ACHIEVEMENT MOTIVATION**  
(Scores in Numbers)

MEANS			Mean Differences	Confidence Interval Value
Pranayama	Aerobics	Control		
13.23	14.36		1.13*	1.01
13.23		13.16	0.07	1.01
	14.36	13.16	1.20*	1.01

\*Significant at .05 level of confidence

The table IV shows that the mean difference values between Pranayama training group and aerobic training group, Pranayama training group and control group, aerobic training group and control group, 1.13, 0.07 and 1.20 respectively on achievement motivation which were greater than the required confidence interval 1.01 significance. The results of this study showed that there was a significant difference between Pranayama training group and aerobic training group, Pranayama training group and control group, aerobic training group and control group on achievement motivation.

## CONCLUSIONS

The following conclusions were drawn based on the analysis of the study,

1. It was concluded that pranayama exercises and aerobic groups were significantly improved on speed of the college men.
2. It was concluded that pranayama exercises was better than aerobic on improving speed among college men.
3. It was concluded that aerobic and pranayama practices groups were significantly improved the achievement motivation of the college men.
4. It was concluded that pranayama group was better than aerobic exercises group on improving achievement motivation of the college men.

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