



Research Paper

## Effect of Fitness Training, Yogic Practices and Combined Training on Flexibility among College Men Students

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### Abstract

**Purpose:** The present study was designed to find out the Fitness Training, Yogic Practices and Combined Training on Flexibility among College Men Students **Subjects:** For this study, sixty (N=60) college men studying various Colleges affiliated to Alagappa University, Karaikudi Tamilnadu, India were selected randomly as subjects. They were divided randomly into four groups of fifteen each (n=15). **Training Protocol:** Group-I underwent Fitness Training Group-II underwent Yogic Practices, Group-III underwent Combined Fitness Training and Yogic Practices and Group-IV was act as Control. The experimental groups underwent respective training period for three days per week for twelve weeks. **Variables:** The dependent variable selected for this study was flexibility and it was assessed through sits and reach test. **Statistical Procedure:** All the subjects were tested prior to and immediately after the training for the entire selected variable. Data were collected and statistically analyzed using ANCOVA. Scheffe's post hoc test was applied to determine the significant difference between the paired means. In all the cases 0.05 level of significance was fixed. **Results:** The results of the study showed that there was a significant difference was found among all the experimental groups namely Fitness Training group, Yogic Practices group, and Combined Fitness Training and Yogic Practices group had significantly increased in flexibility. When the experimental groups were compared with each other, the Combined Fitness Training and Yogic Practices group was found to be greater than the Fitness Training group and Yogic Practices group on the increase of flexibility.

### Keywords:

Fitness Training, Yogic Practices Combined Fitness Training and Yogic Practices, Flexibility

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### I. INTRODUCTION

Physical exercises are helpful to maintain an organically sound body to enjoy an optimum state of health and physical fitness. Achieving and maintaining physical exercise helps to prevent the premature occurrence numerous illness and diseases. The purpose of exercise is to increase the circulation of blood intake of oxygen, improve the strength endurance and functioning of heart lungs and muscles. It helps mental alertness, stress reducing emotional stability and spiritual and moral development. Many researchers strongly support that regular exercise helps one to keep a strong and healthy heart and to prevent cardiovascular diseases (Kamalesh, 1988).

Physical exercise is an organized activity that involves continuous participation. Exercise occupies a leading role in keeping a person fit. It will be quite difficult to adjust ones life in terms of stress, diet, and sleep and so on without proper exercises.

Yoga has been practiced in India for over two millennia. Stories and legends from ancient times testify to the existence of yoga, and to the practitioners and divinities associated with it. Indian literature is a storehouse of knowledge about yoga covering every conceivable level. Roughly in chronological order are the vocals

(books of Scriptural knowledge), the Upanishada (philosophical cosmologies), and their commentaries; then the Puranas (ancient cosmologies), and the two epics, the Ramayana and the Mahabharatha. The Mahabharatha contains within itself that masterpiece of Indian scripture the Bhagavad Gita. Towards the end of Vedic period comes the aphoristic literature, with the "Yoga Aphorisms" of Patanjali of special interest to yoga students. These are, besides, whole bodies of works both ancient (Pre-Christian) and more modern dealing with various aspects of yoga and yoga philosophy, testifying to the continued relevance of yoga as a discipline (*Mira-Mehta, 1994*).

Yoga is one of India's wonderful gifts to mankind. One of its valuable qualities is that it builds up a store of physical health through the practice of a system of exercises called asana which keep the body cleansed and fit. Yoga believes that exercise is essential for speedy removal of toxins and for keeping blood circulation and all internal processes functioning smoothly. Yoga has a complete message for humanity. It is a message for the human body, human mind and human soul (*Kuvalayananda, 1977*).

Yoga can be drilled by guys and females everything being equal and it tends to be taken up at any phase of life. It is never past the point where it is possible to start. Through yoga one can make the progress of life. The reality yoga assumes a significant job for decreasing pressure, strain and uneasiness of normal man just as of competitors. Fundamentally the pressure and the nervousness assume a significant job in games, as these are an essential piece of the "inspiration for pinnacle execution" in a games movement. The ongoing aggressive circumstances force colossal pressure and strains on sportsman while pointing of winning a decoration. The abnormal state of games uneasiness exasperates body mindfulness and influence physiological capacities which oppose the smooth development of muscles, joints and so on.

## II. METHODOLOGY

To achieve this purpose sixty (N=60) college men studying various Colleges affiliated to Alagappa University, Karaikudi Tamilnadu, India were selected randomly as subjects. They were divided randomly into four groups of fifteen each (n=15). Group-I underwent Fitness Training Group-II underwent Yogic Practices, Group-III underwent Combined Fitness Training and Yogic Practices and Group-IV was act as Control. The experimental groups underwent respective training period for three days per week for twelve weeks. The dependent variable selected for this study was flexibility and it was assessed through sits and reach test. All the subjects of the four groups were tested on selected criterion variable at prior to and immediately after the training programme.

## III. ANALYSIS OF THE DATA

The data collected from the experimental groups and control group on prior and after experimentation on selected variable were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

The Analysis of covariance (ANCOVA) on Flexibility of Experimental Groups and Control group have been analyzed and presented in Table -1.

**Table – 1**  
**THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON FLEXIBILITY OF EXPERIMENTAL GROUPS AND CONTROL GROUP**

	<b>Fitness Training Group</b>	<b>Yogic Practices Group</b>	<b>Combined Fitness Training and Yogic Practices</b>	<b>Control Group</b>
<b>Pre- test mean</b>	<b>18.07</b>	<b>17.87</b>	<b>17.91</b>	<b>18.13</b>
<b>Post-test mean</b>	<b>21.00</b>	<b>20.27</b>	<b>23.40</b>	<b>18.27</b>
<b>'t'-test</b>	<b>4.14*</b>	<b>3.24*</b>	<b>7.39*</b>	<b>0.17</b>

\* *Significant at 0.05 level.*

*(Table value required for significance at .05 level for 't'-test with df 14 is 2.15)*

Table – 1 shows that the pre-test mean on Flexibility of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are 18.07, 17.87, 17.91 and 18.13 respectively. The post-test mean are 21.00, 20.27, 23.40 and 18.27 respectively. The obtained dependent t-ratio values between the pre and post test means on Flexibility of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are 4.14, 3.24, 7.39 and 0.17 respectively.

The table value required for significant difference with df 14 at 0.05 level is 2.15. It was concluded that Experimental groups such as Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group had registered significant improvement in Flexibility.

The results of the Analysis of Covariance on Flexibility of the pre, post, and adjusted test scores of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are presented in Table – 2.

**Table – 2  
ANALYSIS OF COVARIANCE ON FLEXIBILITY OF EXPERIMENTAL GROUPS AND CONTROL GROUP**

Test	Fitness Training Group	Yogic Practices Group	Combined Fitness Training and Yogic Practices Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	18.07	17.87	17.91	18.13	Between	0.85	3	0.28	0.49
					Within	32.13	56	0.57	
Post Test Mean	21.00	20.27	23.40	18.27	Between	202.27	3	67.42	59.49*
					Within	63.47	56	1.13	
Adjusted Post Test Mean	20.95	20.33	23.46	18.18	Between	209.81	3	69.94	71.76*
					Within	53.61	55	0.97	

\* Significant at 0.05 level of confidence

(Flexibility Scores in Centimeters)

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

The above table-2 shows that the pre-test mean values on Flexibility of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are 18.07, 17.87, 17.91 and 18.13 respectively. The obtained 'F' ratio of 0.49 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Flexibility.

The post test mean values on Flexibility of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are 21.00, 20.27, 23.40 and 18.27 respectively. The obtained 'F' ratio of 59.49 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Flexibility.

The adjusted post-test means on Flexibility of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group are 20.95, 20.33, 23.46 and 18.18 respectively. The obtained 'F' ratio of 71.76 for adjusted post-test scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Flexibility.

The results of the study indicate that there are significant differences among the adjusted post test means of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group in Flexibility performance.

To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table – 3.

**Table – 3**  
**THE SCHEFFE’S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST**  
**PAIRED MEANS ON FLEXIBILITY**

Adjusted Post-test Means				Mean Difference	Confidence Interval
Fitness Training Group	Yogic Practices Group	Combined Training and Yogic Practices	Fitness Training and Yogic Group		
20.95	20.33			0.62	1.04
20.95		23.46		2.51*	1.04
20.95			18.18	2.77*	1.04
	20.33	23.46		3.13*	1.04
	20.33		18.18	2.15*	1.04
		23.46	18.18	5.28*	1.04

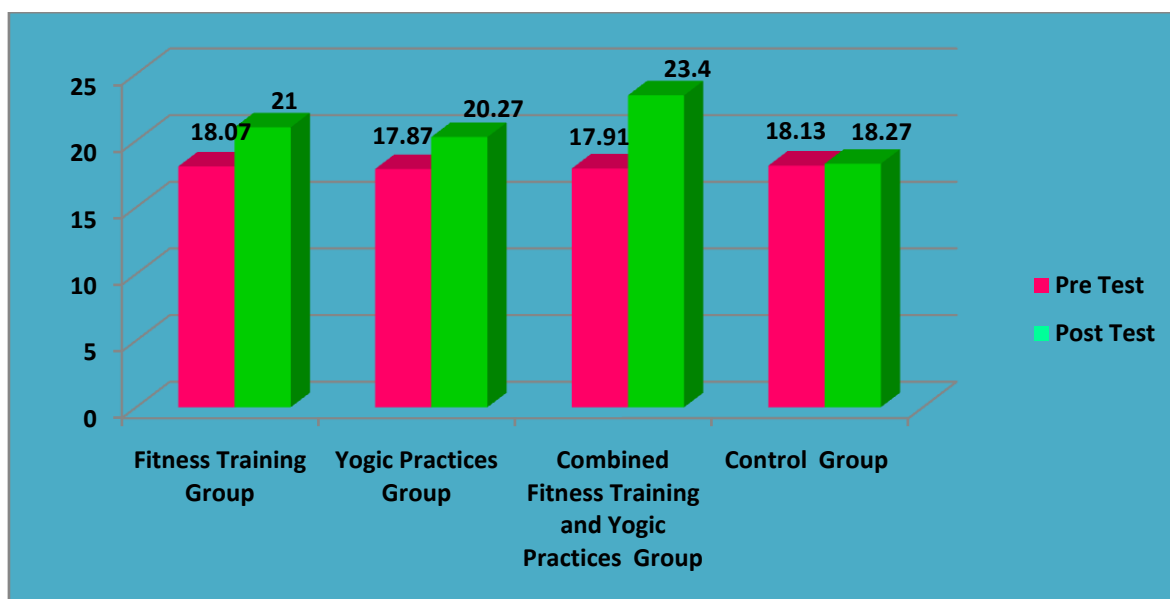
\* Significant at 0.05 level of confidence

Table-3 shows that the adjusted post test mean differences on Flexibility between Fitness Training and Combined Fitness Training and Yogic Practices group, Fitness Training group and Control group, Yogic Practices group and Combined Fitness Training and Yogic Practices group, Yogic Practices group and Control group, Combined Fitness Training and Yogic Practices group and Control group are 2.51, 2.77, 3.13, 2.15 and 5.28 respectively, which are greater than the confidence interval value of 1.04 on Flexibility at 0.05 level of confidence.

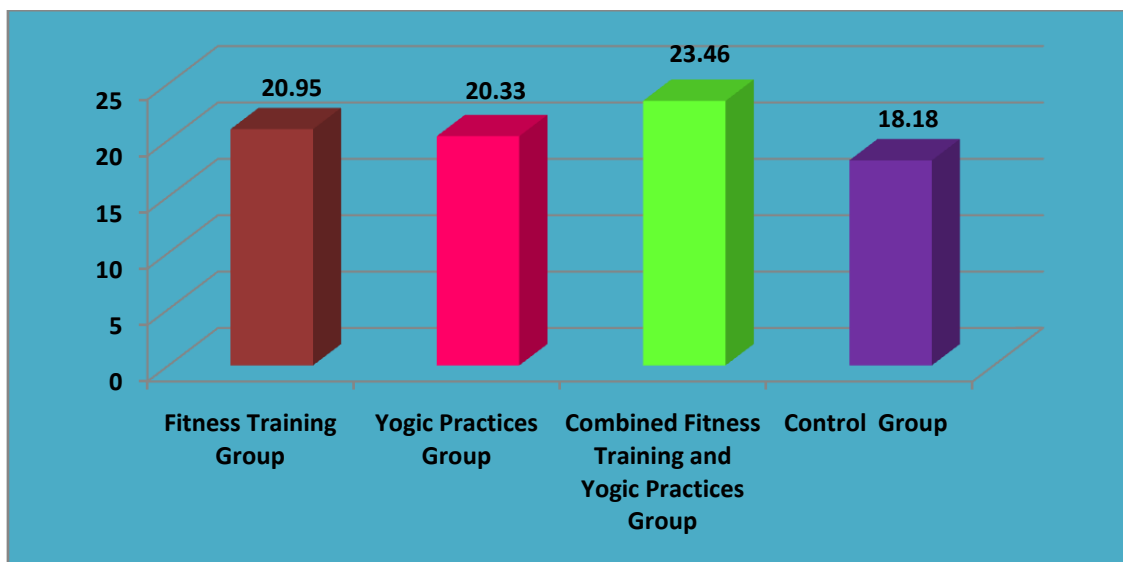
Further the table-3 shows that the adjusted post test mean differences on Flexibility between Fitness Training and Yogic Practices group is 0.62, which is less than the confidence interval value of 1.04 on Flexibility at 0.05 level of confidence.

The results of the study showed that there was a significant difference between Fitness Training and Combined Fitness Training and Yogic Practices group, Fitness Training group and Control group, Yogic Practices group and Combined Fitness Training and Yogic Practices group, Yogic Practices group and Control group, Combined Fitness Training and Yogic Practices group and Control group on Flexibility. Further the results of the study showed that there is no significant difference between Fitness Training and Yogic Practices group on Flexibility.

The above data also reveal that Combined Fitness Training and Yogic Practices group had shown better performance than Fitness Training, Yogic Practices group and Control group in Flexibility. The pre and post mean values of Fitness Training, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group on Flexibility are graphically represented in the Figure -1. The adjusted post mean values of Fitness Training, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group on Flexibility are graphically represented in the Figure –2.



**Figure: 1** The Pre and Post test Mean values of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group on Flexibility (In Centimeters)



**Figure: 2** The Adjusted Post Mean Values of Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group on Flexibility (In Centimeters)

#### IV. CONCLUSIONS

From the analysis of the data, the following conclusions were drawn.

- 1) The experimental groups namely, Fitness Training group, Yogic Practices group, and Combined Fitness Training and Yogic Practices group had significantly improved in Flexibility.
- 2) Significant differences in achievements were found between Fitness Training group, Yogic Practices group, Combined Fitness Training and Yogic Practices group and Control group in Flexibility.
- 3) The Combined Fitness Training and Yogic Practices group was found to have greater impact on the group concerned than the Fitness Training group, Yogic Practices group and Control group in enhancing the performance of Flexibility.

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