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## Effect of functional strength training and Vinyasa flow yoga on selected physical variables among men soccer players

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### Abstract

Nowadays, yoga is the backbone of professional athletes and teams. Further and more people are discovering the countless ways that yoga can be used to improve athletic performance—from increasing mental concentration and enhancing flexibility and balance to preventing common injuries and sharpening skills. This research aims to find out the effect of functional strength training and vinyasa flow yoga on selected physical variables among men soccer players. To accomplish the purpose of the current study forty-five youth soccer players, age ranged from 20 to 25 years old randomly select from colleges under University of Madras, Chennai. The duration of the study period was twelve weeks, and they were randomly divided and employed in three equal groups, consist of 15 members each. Group-I had given functional strength training, Group-II had given vinyasa flow yoga, and Group-III was control which hasn't receive any unique pieces of exercise apart from the regular activities. The functional strength training and vinyasa flow yoga have selected as independent variables. Muscular strength and flexibility have chosen as dependent variables. And all dependent variables were measured by standardized test items as standing broad jump and sit and reach. Analysis of Covariance (ANCOVA) was applied to find out the significant mean differences. In all the cases, the 0.05 level of significance fixed to test the hypothesis. The results of the study have shown that the experimental groups had finished a significant difference in all the selected variables such as muscular strength and flexibility to compared with the control group. Hence it was concluded that functional strength training and vinyasa flow yoga enhanced muscular strength and flexibility among the soccer players.

**Keywords:** Functional training, vinyasa flow yoga, muscular strength, flexibility

### 1. Introduction

As yoga's popularity has increased, we see more and more athletic programs using yoga-inspired movements. Soccer players can benefit from yoga to help improve flexibility, strength, and endurance. You can also improve agility and concentration by practicing yoga. Soccer players who practice yoga are more likely to be more focused and less likely to be injured during a game. Yoga loosens and prepares your muscles for the strenuous exercise of a soccer game, which can prevent muscle strains and joint stress. Soccer involves a lot of running and sprinting during the practice and games. Soccer players can become tight and are prone to leg injuries. Soccer players should do yoga exercises mainly to improve the flexibility in the legs, hips, and joints especially the hips and the hamstrings where folks tend to experience the most tightness.

#### 1.1 Functional Strength Training

The American Council on Exercise (ACE) defines functional strength training as “performing work against resistance in such a manner that the improvements in strength directly enhance the performance of movements so that an individual's activities of daily living are easier to perform.” Functional fitness exercises train your muscles to work together and prepare them for daily tasks by simulating everyday movements you might do at home, at work or in sports. While using various tissues in the upper and lower body at the same time, functional fitness exercises also emphasize core stability.

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## 1.2 Vinyasa flow Yoga

Vinyasa also termed flow because of the harmonious way that the poses run together, is one of the most famous contemporary styles of yoga. It's a broad classification that incorporates many different types of yoga, including Ashtanga and power yoga. In vinyasa yoga, each movement is harmonized to a breath. The breath is given primacy, acting as an anchor as you move from one pose to the next. A cat-cow stretch is an instance of a simple vinyasa. The spine is bowed on an inhale and rounded on an exhale.

## 2. Methodology

### 2.1 Subjects

For the achievement of the purpose of the current study, the investigator selected a total number of thirty (N=45) soccer players had been chosen randomly from University of Madras, Chennai. The participants' age ranged from 20 to 25 years. The subjects were voluntarily participated to conduct the study. They were allocated into three groups. Each group consists of 15 participants, which were assumed to be apt for the study.

### 2.2 Selection of Variables and Tests

Functional strength training and vinyasa flow yoga profoundly influenced by physical aspects. It had found from the literature that these variables might have a significant effect on functional strength training and vinyasa flow. Hence, the investigator seriously got interested to know whether there was any significant enhancement or not in the following variables:

**Table I:** Selection of Tests

Variables	Test
Muscular Strength	Standing Broad Jump
Flexibility	Sit and Reach

### 2.3 Experimental design

The experimental treatment allocated functional strength

training and vinyasa flow yoga to the experimental groups. The pre-test and post-test random group design used in the present study. The selected subjects randomly assigned to the experimental and control group of 15 each. Group-I had Given an hour of functional strength training, Group-II had given vinyasa flow yoga and Group-III was control which had not received any unique pieces of exercise apart from the regular activities. The groups tested on selected criterion variables such as muscular strength and flexibility before and after the training programme.

### 2.4 Treatment

Throughout the training period, the experimental groups underwent functional strength training and vinyasa flow yoga for five days per week for twelve weeks. The workout lasted to 60 minutes/session including dynamic warming up, soccer-specific training and warming down periods. Participants completed five training sessions per week over a 12-week period (60 sessions). Control group were instructed not to participate in any strenuous physical exercise and specialized training throughout the training programme.

### 2.5 Statistical Procedure

The pre-test and post-test random group design used in the present study. The data collected from groups before and after completion of the training period on selected criterion variables. The selected variables were statistically examined for significant differences if any, by applying the analysis of covariance (ANCOVA). To find the significance 0.05 level of significance fixed.

## 3. Results

The subjects were tested on selected criterion variables such as muscular strength and flexibility at before and immediately after the training period. The analysis of covariance on muscular strength and flexibility of functional strength training and vinyasa flow yoga groups and control group are analyzed and presented in given below tables respectively.

**Table 2:** Analysis of Covariance on Muscular Strength of Functional Strength Training Vinyasa Flow Yoga Group and Control Group

	Functional Training Group	Vinyasa Flow Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	'F' ratio
Pre-test Mean	1.48	1.47	1.46	Between	0.002	2	0.001	0.30
S.D.	0.05	0.06	0.06	Within	0.162	42	0.004	
Post-test Mean	1.58	1.55	1.45	Between	0.138	2	0.069	17.34*
S.D.	0.07	0.05	0.05	Within	0.167	42	0.004	
Adjusted Post-test Mean	1.57	1.55	1.46	Between	0.110	2	0.055	63.67*
				Within	0.035	41	0.001	

\* Significant 0.05 level of significance (The table values required for significance at 0.05 level with df 2 and 42, 2 and 41 were 3.22 and 3.23 respectively).

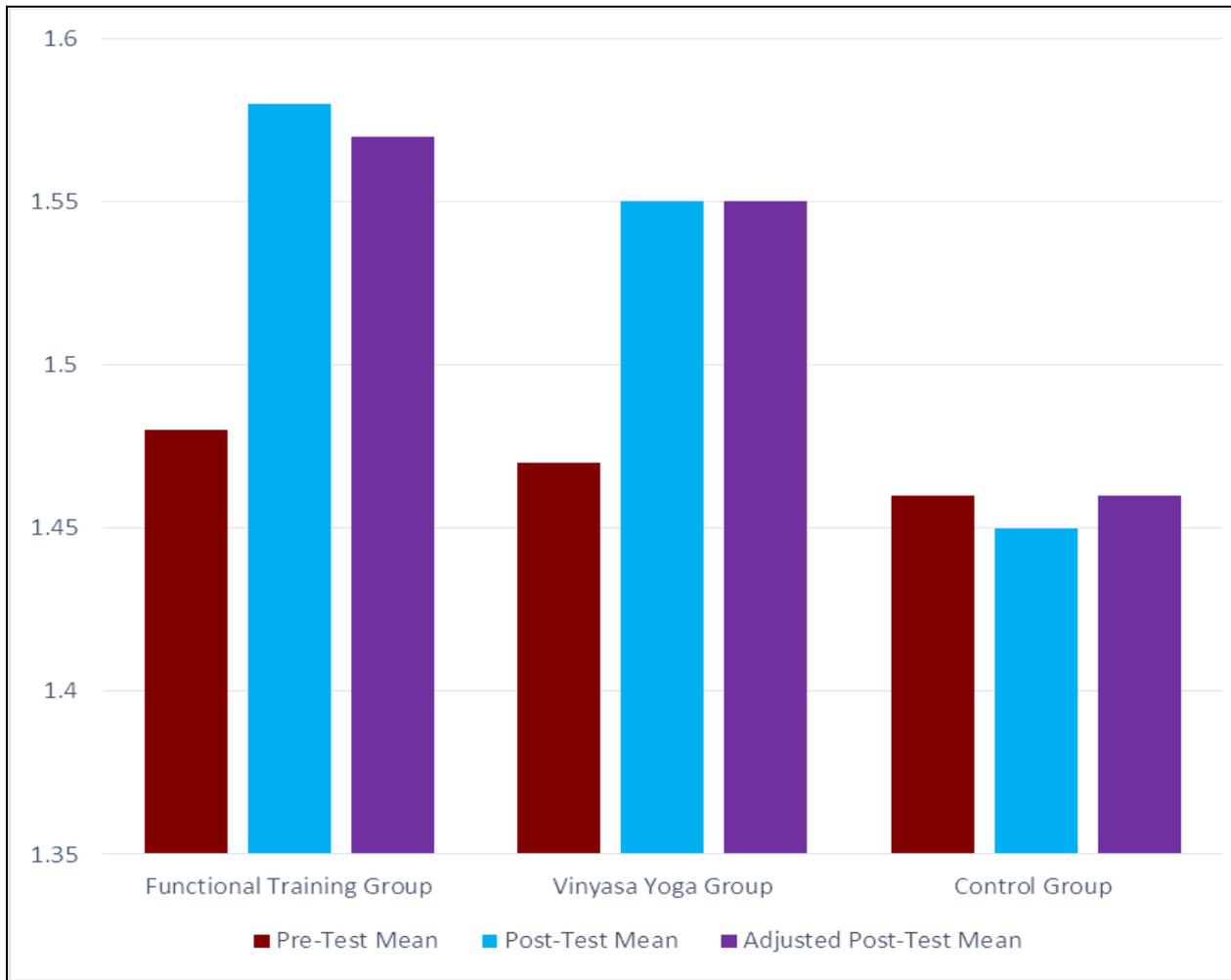
Table-II showed that the pre-test means values of muscular strength for functional training and vinyasa flow and control group were  $1.48 \pm 0.05$ ,  $1.47 \pm 0.06$  and  $1.46 \pm 0.06$  respectively. The obtained 'F' ratio value of 0.30 for pre-test scores of functional training and vinyasa flow and control groups on muscular strength was less than the required table value of 3.22 for significance with df 2 and 42 at 0.05 level of significance.

The post-test means values for muscular strength for functional training and vinyasa flow and control group were  $1.58 \pm 0.07$ ,  $1.55 \pm 0.05$  and  $1.45 \pm 0.05$  respectively. The obtained 'F' ratio value of 17.34 for post-test scores of functional training and vinyasa flow and control group was higher than the required table value of 3.22 for significance

with df 2 and 42 at 0.05 level significance.

The adjusted post-test means values of muscular strength for functional training and vinyasa flow and control group were 1.57, 1.55 and 1.46 and respectively. The obtained 'F' ratio value of 63.67 for adjusted post-test scores of functional training and vinyasa flow and control group was greater than the required table value of 3.23 for significance with df 2 and 41 at 0.05 level of significance. The results of this study have shown that there was a significant difference between functional training and vinyasa flow and control group on muscular strength.

The mean values of functional training and vinyasa flow and control group on muscular strength were graphically represented in Figure-I.



**Fig 1:** Bar Diagram Showing the Mean Values of Functional Strength Training Vinyasa Flow Yoga Group and Control Group on Muscular Strength

**Table 3:** Analysis of Covariance on Flexibility of Functional Strength Training Vinyasa Flow Yoga Group and Control Group

	Functional Training Group	Vinyasa Flow Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	'F' ratio
Pre-test Mean	13.88	13.70	13.89	Between	0.325	2	0.163	0.069
S.D.	1.93	1.24	1.33	Within	98.56	42	2.347	
Post-test Mean	18.38	18.69	13.68	Between	236.2	2	118.1	18.39*
S.D.	3.39	2.36	1.45	Within	269.7	42	6.422	
Adjusted Post-test Mean	18.33	18.79	13.62	Between	245.1	2	122.5	25.35*
				Within	198.1	41	4.834	

\* Significant 0.05 level of significance (The table values required for significance at 0.05 level with df 2 and 42, 2 and 41 were 3.22 and 3.23 respectively).

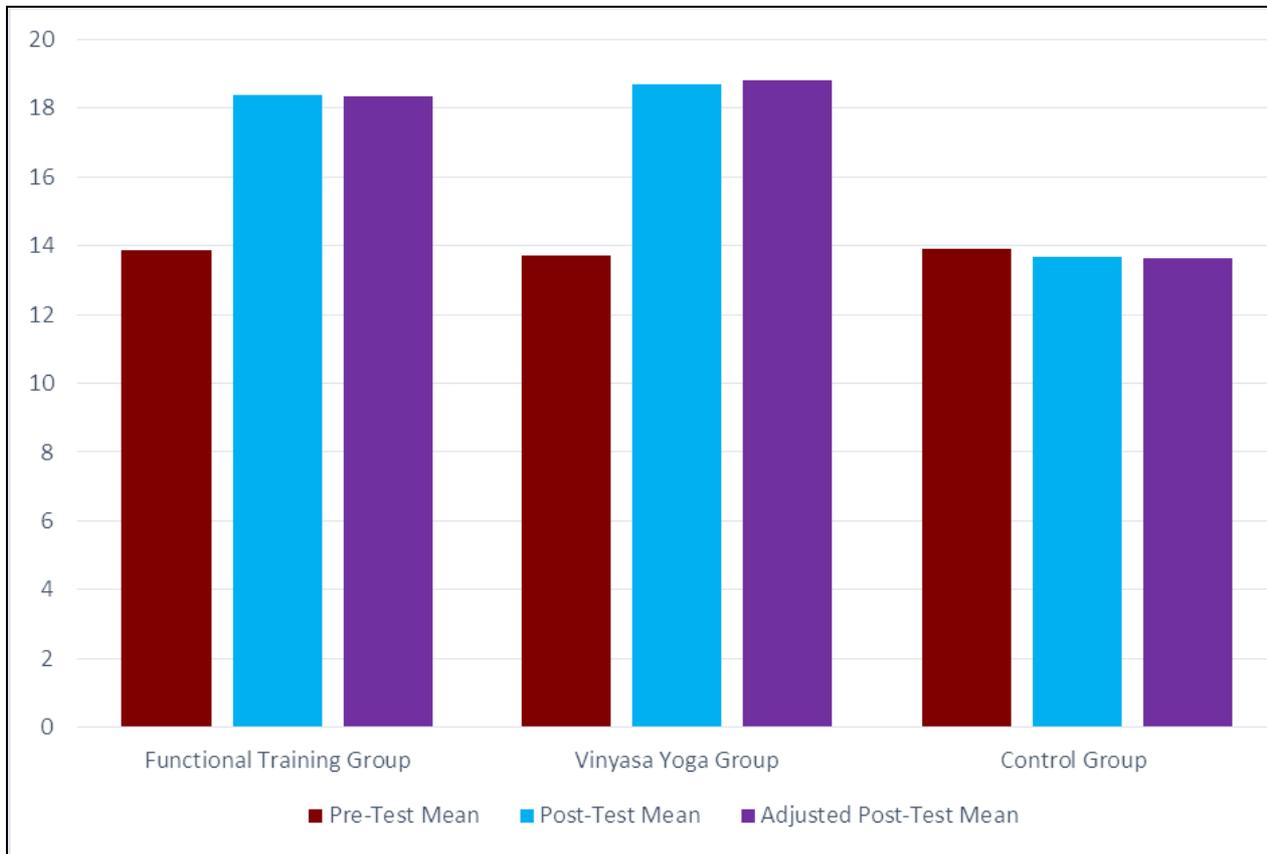
Table-III showed that the pre-test means values of flexibility for functional training and vinyasa flow and control group were  $13.88 \pm 1.93$ ,  $13.70 \pm 1.24$  and  $13.89 \pm 1.33$  respectively. The obtained 'F' ratio value of 0.069 for pre-test scores of functional training and vinyasa flow and control groups on flexibility was less than the required table value of 3.22 for significance with df 2 and 42 at 0.05 level of significance.

The post-test means values for flexibility for functional training and vinyasa flow and control group were  $18.38 \pm 3.39$ ,  $18.69 \pm 2.36$  and  $13.68 \pm 1.45$  respectively. The obtained 'F' ratio value of 18.39 for post-test scores of functional training and vinyasa flow and control group was higher than the required table value of 3.22 for significance

with df 2 and 42 at 0.05 level significance.

The adjusted post-test means values of flexibility for functional training and vinyasa flow and control group were 18.33, 18.79 and 13.62 respectively. The obtained 'F' ratio value of 25.35 for adjusted post-test scores of functional training and vinyasa flow and control group was greater than the required table value of 3.23 for significance with df 2 and 41 at 0.05 level of significance. The results of this study have shown that there was a significant difference between functional training and vinyasa flow and control group on flexibility.

The mean values of functional training and vinyasa flow and control group on flexibility were graphically represented in Figure-II.



**Fig 2:** Bar Diagram Showing the Mean Values of Functional Strength Training Vinyasa Flow Yoga Group and Control Group on Flexibility

#### 4. Conclusions

The results of the study indicated that twelve weeks of functional strength training and vinyasa flow yoga led to significant improvements in muscular strength and flexibility among soccer players. Furthermore, functional strength training evidenced more effective in muscular strength when compared to vinyasa flow yoga group, and vinyasa flow yoga evidenced more effective in increasing flexibility when compared to the functional strength training group. And the training method appears to endorse fitness. Based on the results of the study the investigator recommend that similar research can be conducted for a different sport, age, and gender. It also suggests that the same research can be performed with physiological and motor fitness components also.

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