Original Article

# EFFECT OF YOGA AND SELF-MYOFASCIAL RELEASE ON FLEXIBILITY AND LEG MUSCLE EXPLOSIVE POWER AMONG MEN FOOTBALL PLAYERS

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## Abstract

People are discovering the countless ways that yoga and self-myofascial release can be used to improve football performance. This study aims to find out the effect of yoga and self-myofascial release on flexibility and leg muscle explosive power among men football players. Data were analyzed from forty-five (45) men football players and age level were from 18-25 years old and they were stratified into a yoga group (YG, n = 15), self-myofascial release training group (SRTG, n=15) and a combined training group (CTG, n = 15). The YG and SRTG received periodized yoga practice and self-myofascial release training for 12 weeks. The flexibility and leg muscle explosive power of all the groups were evaluated before and after the training, and the variables were measured by standardized test items as sit and reach test and vertical jump test. Analysis of covariance (ANCOVA) was performed to find out the significant mean differences. In all the cases, the level of significance was set at $p < 0.05$. There was found significant difference on the twelve weeks of structured yoga practice, self-myofascial release training and combined training groups. Conferring to the obtained results, it can be concluded that yoga and self-myofascial release training leads to significant improvement in flexibility and leg muscle explosive power among men football players. Although, CTG has relatively more effective in increase of flexibility and leg muscle explosive power among men football players as compared to YG and SRTG group.

**Keywords**: Yoga, Self-Myofascial Release, Flexibility, Leg muscle explosive power, Sit & Reach, Vertical Jump.

## 1. INTRODUCTION

A football player is a living soul who contests in football that encompass physical strength, power, endurance or flexibility. A phenomenal level of football performance needs the effective adroitness in abilities like the power, strength, endurance, flexibility and their descendants such as sprinting and jumping. As yoga's popularity has increased, we see more and more football training programs using yoga-inspired movements. Football players can benefit from yoga because it is a powerful training tool for preparing the muscles for the strenuous exercise of a football performance, which helps stretching, strength building, breathing, leg muscle explosive power, prevent muscle strains and joint stress.

yoga poses are the types of yoga poses to develop the capacity and ability of the hips; Particularly as an athlete, it is essential to have strong hips and fully flexible hips. Hips and pelvis produce the base of power and flexibility to support for all the movements. A strong hip will allow the men soccer players to generate the power, mobility, and agility.

Self-Myofascial Release (SMR) is a form tool assisted, self-massage used to relieve muscle tension, improve flexibility, and promote movement efficiency. SMR can be performed with a variety of equipment such as foam rollers, lacrosse or tennis balls, hand held rollers, or even a rolling pin.

Self-Myofascial Release is self-same to a massage, and it can indulge the muscle health. It is a vital tool to improve flexibility, reduce inflammation, muscle tightness, and relieve muscle pain.

## 2. MATERIALS AND METHODS

2.1 Participants

Forty-five young adult men football players, and their age level were 18-25 years, they were recruited from the affiliated colleges under the Bharathidasan University through the verbal message to participate in the study. All study participants were familiar with yoga and self-myofascial release training.

2.2 Experimental groups, Variables & Tests

Table I: Training Groups

| Group | Name |
|---|---|
| ***Group I - Experimental*** | ***Yoga Group (YG)*** |
| ***Group II - Experimental*** | ***Self-Myofascial Release Training Group (SRTG)*** |
| ***Group III - Combined*** | ***Yoga + Self- Myofascial Release (Combined Training Group CTG)*** |

Table II: Variables

| Type | Variables |
|---|---|
| ***Independent*** | ***Yoga*** |
| | ***Self-Myofascial Release*** |
| | ***Yoga + Self- Myofascial Release*** |
| ***Dependent*** | ***Flexibility*** |
| | ***Leg Muscle Explosive Power*** |

Table III: Selection of Tests

| Variables | Test | Measurement |
|---|---|---|
| ***Flexibility*** | ***Sit and Reach Test*** | ***Centimeters*** |
| ***Leg Muscle Explosive Power*** | ***Vertical Jump Test*** | ***Centimeters*** |

2.3 Experimental design

The experimental treatment yoga practice and self-myofascial release training allocated to the experimental groups. The pre-test and post-test random group design used in the present study. The participants were randomly assigned to the experimental and control groups consisting of 10 subjects each. Group-I had Given an hour of yoga practice, Group-II had given self-myofascial release training and Group-III was combined which had the Yoga poses + Self- Myofascial Release training. The groups tested on selected criterion variables such as flexibility and leg muscle explosive power before and after the training programme.

2.4 Training program

Throughout the training period, the experimental groups underwent yoga practice, self-myofascial release and combined training for three days per week for twelve weeks. The yoga practice, self-myofascial release and combined training lasted to

60 minutes/session including dynamic warming up and warming down periods. Participants completed three training sessions per week over a 12-week period (36 sessions).

2.5 Statistical Analysis

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). The level of significance was set at $p < 0.05$ for all the tests.

## 3. RESULTS

The subjects were tested on selected criterion variables such as flexibility and leg muscle explosive power at before and immediately after the training period. The analysis of variance on flexibility and leg muscle explosive power of yoga practice, self-myofascial release and combined training group are analyzed and presented in given below tables respectively.

TABLE-IV Analysis of Variance on Flexibility and Leg Muscle Explosive Power of YG, SRTG and CTG

| **Variables** | | YG | SRTG | CTG | **SV** | **SS** | **df** | **MS** | **'F' Ratio** |
|---|---|---|---|---|---|---|---|---|---|
| **Flexibility** | Pre-test | 20.13 | 20.20 | 21.53 | **B** | 18.711 | **42** | 9.356 | 0.76 |
| | | | | | **W** | 513.86 | | 12.235 | |
| | Post-test | 25.53 | 23.13 | 28.80 | **B** | 242.71 | **42** | 121.35 | 11.13* |
| | | | | | **W** | 457.86 | | 10.902 | |
| **Leg muscle explosive power** | Pre-test | 41.60 | 41.00 | 40.67 | **B** | 6.711 | 42 | 3.356 | 0.19 |
| | | | | | **W** | 728.93 | | 17.356 | |
| | Post-test | 44.20 | 42.13 | 46.67 | **B** | 154.53 | 42 | 77.267 | 4.08* |
| | | | | | **W** | 795.46 | | 18.940 | |

* Significant 0.05 level of significance

(The table values required for significance at 0.05 level with df 2 and 42, 2 was 3.22).

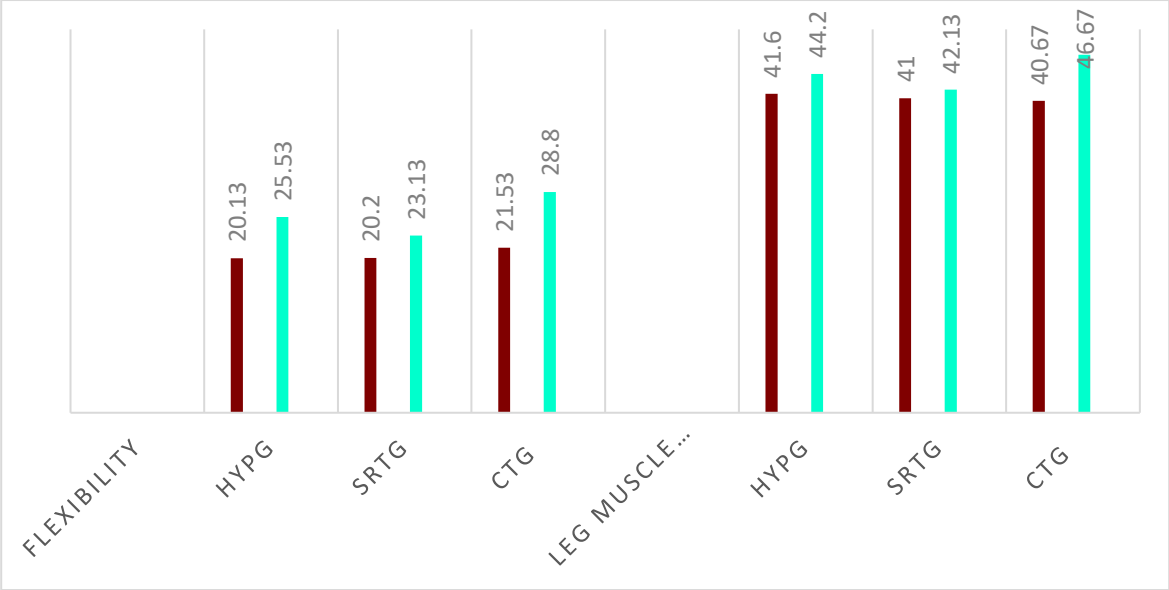
The analysis showed that the pre-test means values of flexibility for YG, SRTG and CTG were 20.13, 20.20 and 21.53 respectively. The obtained 'F' ratio value of 0.76 for pre-test scores of YG, SRTG and CTG on flexibility was less than the required table value of 3.22 for significance with df 42 at 0.05 level of significance. The post-test means values for flexibility for YG, SRTG and CTG were 25.53, 23.13 and 28.80 respectively. The obtained 'F' ratio value of 11.13 for post-test scores of YG, SRTG and CTG was higher than the required table value of 3.22 for significance with df 42 at 0.05 level significance. Based on the pre and post data, it is found that there is significant difference exists among the three groups on flexibility. Based on the results of this study have shown that there was a significant difference between YG, SRTG and CTG on flexibility. Although, CTG has relatively more effective in increase of flexibility among men football players as compared to YG and SRTG group.

The analysis showed that the pre-test means values of leg muscle explosive power for YG, SRTG and CTG were 41.60, 41.00 and 40.67 respectively. The obtained 'F' ratio value of 0.19 for pre-test scores of YG, SRTG and CTG on leg muscle explosive power 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 leg muscle explosive power for YG, SRTG and CTG were 44.20, 42.13 and 46.67 respectively. The obtained 'F' ratio value of 4.08 for post-test scores of YG, SRTG and CTG was higher than the required table value of 3.22 for significance with df 42 at 0.05 level significance. Based on the results of this study have shown that there was a significant difference between YG, SRTG and CTG on leg muscle explosive power. Although, CTG has relatively more effective in increase of leg muscle explosive power among men football players as compared to YG and SRTG group.

The mean values of YG, SRTG and CTG on flexibility and leg muscle explosive power were graphically represented in Figure-I.

Figure – I Bar Diagram Showing the Mean Values of YG, SRTG and CTG on Flexibility and Leg Muscle Explosive Power




## 4. DISCUSSION

The present study examined the effect of yoga and self-myofascial release training on flexibility and leg muscle explosive power among men football players. The results showed a statistically significant increase ($p < 0.05$) in the value of the flexibility and leg muscle explosive power in the YG, SRTG and CTG. Although, CTG has relatively more effective in the increase of flexibility and leg muscle explosive power among men football players as compared to YG and SRTG group. Schroeder & Best, (2015) also found that foam rolling appears to have a positive effect on flexibility. Skarabot et al., (2015) compared that foam rolling to traditional stretching, and the results of the study have shown that both stretching and foam rolling can increase flexibility. Savitri & Chandrappa (2015) found that yoga improved the explosive leg power. Polsgrove et al., (2016) have observed that yoga practice enhances the flexibility of male college athletes. Khushal (2016) found that yoga practice improves flexibility among young adults. Rajkumar (2017) studied the effect of yoga on explosive leg power, and he discovered that yoga improved explosive leg power. These findings suggest that YG, SRTG and CTG over 12 weeks were able to promote improvements in flexibility and leg muscle explosive power among young adult football players.

## 5. CONCLUSIONS

The results of the study indicated that twelve weeks of yoga and self-myofascial release training led to significant improvements in flexibility and leg muscle explosive power among men football players. CTG evidenced more effective in flexibility and leg muscle explosive power when compared to YG and SRTG. 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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