Research Paper Physical Education

Combined Effect of Yoga and Endurance Exercises on Lean Body Mass Among Players

C.KARTHIKEYAN Ph.D Scholar(Part Time), Thiru. Vi. Ka. Government Arts College, & Director of Physical Education, Saranathan College of Engineering, Tiruchirappalli-620 012 Tamil Nadu.

Dr A. UTHIRAPATHY Ph.D, Director of Physical Education(SG), Thiru. Vi. Ka. Government Arts College, Tiruvarur Tamil Nadu.

ABSTRACT

Aim of the study was to find out the combined effect of Yoga and Endurance exercises on Lean Body Mass among players. For this study forty five (N=45) men Football players studying various Engineering College in the Zone-XIII affiliated to Anna University, Chennai Tamilnadu, India during the academic year 2011-2012 were selected randomly as subjects. The subjects were divided into three groups of fifteen each, namely Yoga training (n=15), Endurance training (n=15) and Combined Yoga and Endurance training. Lean Body Mass was selected as dependent variable and it was assessed by Using Formula (Total body weight - kilograms of body fat). The training period was limited to 12 weeks duration. All the subjects were tested on Lean Body Mass prior to and immediately after the training periods. The data collected data from the three groups prior to and immediately after the training programme on the selected criterion variables were statistically analyzed with Analysis of Covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, Scheffe's post hoc test was followed to determine which of the paired mean differences was significant. In all the cases 0.05 level of confidence was fixed to test the hypotheses. The results of the study concluded that there was a significant difference among Yoga training, Endurance training and Combined Yoga and Endurance training on Lean Body Mass among Inter Collegiate Football players, further the results revealed that Combined Yoga and Endurance Training group had significantly improved the selected dependent variable namely Lean Body Mass.

KEYWORDS Yoga training, Endurance training, Lean Body Mass

INTRODUCTION

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).

The word Yoga has been derived from the Sanskrit word 'Yuj' which essentially means 'to join' or 'unite' etc. Yoga originated in India almost 26,000 years back, during the period of the 'Sat Yuga', also called the Golden Age. This period became known for a time of everlasting peace and abundant blessings amongst the people, who could afford all the time to seek the truth and search within. Research says that yoga's origin dates back to more than 5,000 years ago. The discovery of the Indus- valley civilization, which is the largest civilization, opened the channels of knowledge about the origin of yoga.

Endurance training is the act of exercising to increase stamina and endurance. The term 'endurance training' generally refers to training the aerobic system as opposed to anaerobic. The need for endurance in sports is often predicated as the need of cardiovascular and simple muscular endurance, but the issue of endurance is far more complex. Endurance can be divided into two categories including: general endurance and specific endurance. It can be shown that endurance in sport is closely tied to the execution of skill and technique. A well conditioned athlete can be defined as, the athlete who executes his or her technique consistently and effectively with the least effort (Yessis, 2008).

Endurance training is essential for a variety of endurance sports. A notable example is distance running events (800 meters upwards to marathon and ultra-marathon) with the required degree of endurance training increasing with race distance. Two other popular examples are cycling (particularly road cycling) and competitive swimming. These three endurance sports could be combined as a triathlon, decathlon or biathlon. Other endurance sports for which extensive amounts of endurance training is required include rowing and cross country skiing. Athletes can also undergo endurance training when their sport may not necessarily be an endurance sport in the whole sense but may still demand some endurance. For instance aerobic endurance is somewhat necessary (to varying extents) in racket sports, football, rugby, martial arts and basketball. Endurance exercise tends to be popular with non-athletes for the purpose of increasing general fitness or burning more calories to increase weight loss potential.

METHODOLOGY

To purpose of this study was to find out the effect of Yoga and Endurance exercises on Lean Body Mass among players. For this study forty five (N=45) men Football players studying various Engineering College in the Zone-VIII affiliated to Anna University, Chennai Tamilnadu, India during the academic year 2011-2012 were selected randomly as subjects. The subjects were divided into three groups of fifteen each, namely Yoga training (n=15), Endurance training (n=15) and Combined Yoga and Endurance training. Lean Body Mass was selected as dependent variable and it was assessed by Using Formula (Total body weight - kilograms of body fat). The training period was limited to 12 weeks duration. All the subjects were tested on Lean Body Mass prior

to and immediately after the training periods.

RESULTS AND DISCUSSION

The data collected data from the three groups prior to and immediately after the training programme on the selected criterion variables were statistically analyzed with Analysis of Covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, Scheffe's post hoc test was followed to determine which of the paired mean differences was significant. In all the cases 0.05 level of confidence was fixed to test the hypotheses.

The Analysis of covariance (ANCOVA) on Lean Body Mass of Yoga training group, Endurance training group and Combined Yoga and Endurance training group have been analyzed and presented in Table -I.

Table – I

Analysis of Covariance between Yoga training group, Endurance training group and Combined Yoga and Endurance training group on Lean Body Mass

Certain Variables	Adjusted Post test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F'Ratio
	Yoga Training Group-(I)	Endurance Training Group-(I)	Combined yoga and Endurance Training Group (III)					
Lean Body Mass	36.18	36.62	38.69	Between With in	52.89 30.75	2 41	26.45 0.75	35.27*

***Significant at .05 level of confidence.**

(The table value required for significance at 0.05 level with df 2 and 41 is 3.23)

Table I shows that the adjusted post test mean values of Lean Body Mass for Yoga training group, Endurance training group and combined yoga and endurance training group are 36.18, 36.62 and 38.69 respectively. The obtained F-ratios are 35.27 more than the table value 3.23 for df 2 and 41 required for significance at 0.05 level of confidence.

The results of the study indicate that there is a significant difference exists among the adjusted post test means of experimental groups showing the increase in Lean Body Mass.

To determine which of the paired means had a significant differences, Scheffe's test was applied as Post hoc test and the results are presented in Table II.

Table - II

The Scheffe's test for the Differences between the Adjust ed Post Tests Paired Means on Dependent Variable

Certain Variable	Adjusted Post test Means			Mean Difference	Confidence Interval
	Yoga Training Group-(I)	Endurance Training Group-(I)	Combined yoga and Endurance Training Group (III)		
Lean Body Mass	36.18	36.62		0.44*	0.05
	36.18		38.69	2.51*	0.05
		36.62	38.69	2.07*	0.05

*** Significant at 0.05 level of confidence**

Table II shows that the adjusted post test mean for differences on Lean Body Mass between Yoga training group and Endurance Training group, Yoga training group and Combined Yoga and Endurance Training group and Endurance training group and Combined Yoga and Endurance Training group are 0.44, 2.51 and 2.07. The values are greater than the confidence interval 0.05, which shows significant differences at .05 level of confidence.

The adjusted post test means values of Yoga training group, Endurance training group and Combined Yoga and Endurance training group on Lean Body Mass was graphically represented in the figure-I.

LEAN BODY MASS IN KILOGRAMS

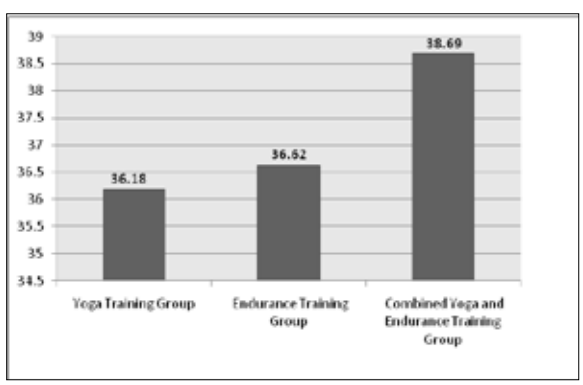

Figure I: Adjusted Post Test Means Values of Yoga Training Group, Endurance Training Group and Combined Yoga and Endurance Training Group on Lean Body Mass

CONCLUSION

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

1. The Experimental groups had registered significant improvement on the selected criterion variables namely Lean Body Mass.
2. It may be concluded that the Combined Yoga and Endurance Training is better than Yoga training group and Endurance Training group in improving Lean Body Mass.

REFERENCES

Mira Mehta (1994), How to use Yoga, London: Annes Publishing Ltd. | Retrieved from http://en.wikipedia.org/wiki/Body_composition | Yessis Michael (2008), Secrets of Russian Sports Fitness & Training, ISBN 978-0-9817180-2-6. |