



EFFECTS OF EIGHT-WEEKS YOGIC ASANAS ON AGILITY AND MUSCULAR ENDURANCE OF VOLLEYBALL PLAYERS

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ABSTRACT

The aim of the present study is to find the effect of Eight-Week of Yogicasanas on volleyball players. For this study researcher assigned 20 male volleyball players (10 players assigned as experimental group and 10 players assigned as a control group) from Pondicherry University, in the academic year 2016-2017. The data were collected through a random sampling method with ages ranging 20 -22 years of state volleyball players. The experimental group underwent eight weeks of yogicasanas exercises and another group was kept as control. There were two dependent variables namely agility and muscular endurance taken into account for this study. Dependent 't' was applied to assess the outcome of the study. The level of significance was taken as a $P < 0.01$ level. The results of this study showed that agility and muscular strength were found to have significant improvement. On the other hand, an insignificant result was obtained in the case of the control group.

Keywords: Yogasana, agility, muscular strength, Chakra-asana, Saravangasana

INTRODUCTION

Yoga is a very ancient discipline. It is recognized as one of the most important and valuable gifts of the Indian heritage. Yoga is an indigenous physical and mental training. Hence it has its varieties and diversions as it has its right and discipline, the different kinds of yoga have played a vital role in forming the spirit of modern India. According to the classic text of the Yoga Sutras of Patanjali, "yoga" is the complete "inhibition of the modifications of the mind" quieting of the constant chatter in one's mind so that our True Selves can manifest, rest in our own true nature and be free of suffering. Traditional yogic practices include breath control and techniques (pranayama), meditation (including mindfulness), the adoption of specific bodily postures (asanas) and selfreflection (Taimini, 2008). The term "yoga" and the English word "yoke" are derived from Sanskrit root "yuj" which means union. Yoga is a psycho-somatic-spiritual discipline for achieving union & harmony between our mind, body and soul and the ultimate union of our individual consciousness with the Universal consciousness (Madanmohan, 2008). These yoga practices might be interacting with various somatic and neuro-endocrine mechanisms bringing about therapeutic effects (Malhotra and Singh, 2002). The overall performance is known to be improved by practicing yoga techniques (Upadhyay *et al*, 2008) and their effects on physical functions were reported (Hadi 2007).

Asanas are special patterns of postures that stabilize

the mind and the body through static stretching. Regular practice of sun salutation regulates pingala nadi (right nostril), whether it is underactive or overactive, thus leading to a balanced energy system at both the mental and physical levels. Volleyball is very popular game worldwide. There is a need of high level of physical and physiological fitness to participate at the elite level. The various selected 'asanas' giving different movements to the spine, controlled respiration, relaxation technique and concentration practice as a whole form an excellent routine to take care of the health of vital organs of the body. Although not many scientific researchers have been done, the works of Anburaj Rengasamy Dhanaraj., (1992), Govindaraju, et.al., (2003), Johnson Prem kumar and Marriayyah (2006) have shown enough evidence about how yoga could be gainfully employed in the promotion of physical factors.

Volleyball is a game of constant action and requires continuous adaptations to changing situations by the team as a whole as well by the individual players. Although it is a team game, there is ample room for players to display their brilliance through individual performance with the ball as well as through the team play involving improvisation and tactical knowledge. One of the greatest strengths of the game is its simplicity

MATERIAL AND METHODS

Subjects

The present study involves 20 state-level male

volleyball players and data was collected through a random sampling approach from Pondicherry University in the academic year 2016-2017. Players of 20-22 years were engaged in studies. They were randomly assigned into two groups (experimental n = 10) and (control n = 10). The experimental group did eight weeks of yogaasanas in the morning session and 45 minutes of training each day, 5 days a week. The training consisted of a numerous yogicasanas

1. Pascimottanasana
2. Saravangasana
3. Dhanurasana
4. Chakra-asana
5. Halasana
6. Trikonasana
7. Adho Mukha Shvanasana
8. Akarna Dhanurasana
9. Balasana
10. Hanumanasana

Selection of Variables and Tests:

The Subjects were tested on the following physical fitness variables.

Variables /Test

Agility was assessed by shuttle run

purpose: this is a test of speed, body control and the ability to change direction (agility).

procedure: Mark two lines 10 meters apart using marking tape or cones. The two blocks are placed on the line opposite

the line they are going to start at. On the signal "ready", the participant places their front foot behind the starting line. On the signal, "go!" the participant sprints to the opposite line, picks up a block of wood, runs back and places it on or beyond the starting line. Then turning without a rest, they run back to retrieve the second block and carry it back across the finish line. A total of 40m is covered. Two trials are performed

Muscular Strength was measured by Sit-ups Test

purpose: This test measures the endurance of the abdominal and hip-flexor muscles.

procedure: The aim of this test is to perform as many sit-ups as you can in 30 seconds. Lie on the mat with the knees bent at right angles, with the feet flat on the floor and held down by a partner. The fingers are to be interlocked behind the head. On the command 'Go', raise the chest so that the upper body is vertical, and then return to the floor. Continue for 30 seconds. For each sit up the back must return to touch the floor.

Data Analysis:

To analyze the results of the study, descriptive characteristics namely; mean and standard deviation of data were obtained. The dependent 't' test was used to compare experimental group and control group at $P < 0.01$ level of significant. All statistical analyses were analyzed using the Statistical Package for the Social Science (SPSS).

RESULTS

The results of agility and muscular endurance of volleyball players are presented in the below tables.

Table 1: Mean, Standard Deviation (SD) of Agility of Experimental and Control Groups

Groups	Number	Mean	S.D.	't' value
Experimental (Pre-test)	10	14.08	0.48	5.45**
Experimental (Post-test)	10	13.32	0.51	
Control(Pre-test)	10	14.25	0.38	0.67
Control(Post-test)	10	14.17	0.38	

**Significant at $p < 0.01$ level

Table-1 shows that the mean of agility of pretest of experimental group and posttest of experimental group was 14.08 and 13.32 respectively, whereas the mean of agility of pre test of control and post test of control group was 14.25 and 14.17. The "t" value in case of experimental group was 5.45** at Significant at $p < 0.01$ level and for control group it was 0.67. From the table 1 it showed that yogic asana had significant improvement on agility

Table 2: Mean, Standard Deviation (SD) of Muscular endurance of Experimental and Control Groups

Groups	Number	Mean	S.D.	't' value
Experimental (Pre-test)	10	35.12	3.90	10.45**
Experimental (Post-test)	10	43.35	3.46	
Control(Pre-test) Control(Post-test)	10	34.63	3.95	0.74
	10	36.11	3.28	

**Significant at $p < 0.01$ level

Table-2 shows that the mean of muscular strength of pre test of experimental group and post test of experimental group was 35.12 and 43.35 at $p < 0.01$ level of significant respectively, whereas the mean of muscular strength of pretest of control and posttest of control group was 34.63 and 36.11. The dependent “t” value in case of experimental group was 10.45 and for control group it was 0.74.

DISCUSSION

This study showed that significant increases in agility and muscle endurance due to yogic asanas and insignificant results were obtained in case of control group. Scientific studies on yoga demonstrate that yoga improves the dexterity, strength, and musculoskeletal coordination of the practitioners. Postures assumed during yoga practice are mainly isometric exercises that provide optimally maintained stretch to the muscles. In this study, the 8-weeks of yogasanas training program showed significant improvement in balance and agility. These findings are supported by other reports. Yogic techniques are known to improve one's overall performance and work capacity. Sharma et al (2008) conducted a prospective controlled study to explore the short-term impact of a comprehensive but brief lifestyle intervention based on yoga, on subjective well-being in normal and diseased subjects. Normal healthy individuals and subjects having hypertension, coronary artery disease, diabetes mellitus, or a variety of other illnesses were included in the study. They reported significant improvement in the subjective well-being scores of 77 subjects within a period of 10 days as compared to controls. Yoga asana was also shown to improve flexibility and health perception (Cowen and Adams, 2005). Muscular endurance increased significantly in experimental group (Table 2). Prior yoga investigations that specifically measured isometric muscular strength with the hand dynamometer yielded conflicting results. Blumenthal et al. (1989) showed no changes, whereas Madanmohan et al (2008) reported significant improvements in hand-grip strength resulting from yoga practice. However, since isometric strength is specific to the muscle group and the joint angle being tested, (Kitai and Sale; 1989) hand-grip strength is a poor measure of general body strength.

CONCLUSION

This study concludes that eight-week of yogic asana had significant effect on agility and muscular endurance of male volleyball players. These data provide more evidence to support the beneficial effect of yoga asana training on agility and muscular endurance and thus, such training may be recommended to enhance sports performance.

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