ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effect of Yogic Packages and Mobility Training on Selected Physiological Variables among Volleyball Players

Jelastin D. Prabu[1] & Dr.N.Aseer Rufus[2]

[1]*Ph.D., Research Scholar, Department of Physical Education, Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India.*
[2]*Assistant Professor, Scott Christian College, Nagercoil, Tamilnadu, India.*

Received 28th May 2016, Accepted 15th July 2016

Abstract

The purpose of the study was to find out the effect of yogic packages and mobility training on selected physiological variables among volleyball players. To achieve the purpose of the present study, sixty men volleyball players from Kanyakumari district, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of twenty players each. Group I acted as Experimental Group I (Yogic packages), Group II acted as Experimental Group II (Mobility training) Group III acted as control group. Pre test was conducted for all the subjects on selected physiological variables. This initial test scores formed as pre test scores of the subjects. The duration of experimental period was 12 weeks. After the experimental treatment, all the subjects were tested on their physiological variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The yogic packages had shown significant differences on resting pulse rate, systolic blood pressure and diastolic blood pressure than the mobility training and control groups.

Keywords: Yoga, Mobility, Volleyball, Physiological Variables.

Introduction

Yoga is an ancient art based on a harmonizing system of development for the body mind and spirit. It is a practical aid, not a religion the continued practice of yoga will lead one to a sense of peace and well and also a feeling in harmony with one's environment. Yoga is one of the six systems of Indian philosophy. The classical form of yoga, based on the text described to patanjali, became known in the middle ages as Raja Yoga or "Royal Yoga". Other forms of yoga also developed, which might be followed together with, or independently of the classical yoga. Among theses the practices of Hatha Yoga have become famous throughout the world, and the term yoga is often used to denote them. Hatha Yoga seems to be a late development in Hinduism, and the earliest texts on the subject date from little before the Muslim invasion. It is closely connected with Tantrism. This requires an intense development of the will, so that all the automatic process of the body are brought fully under the control of the mind, and the yogi can control the rhythm of his heart beats at will, live for many days without food and water, and survive for an appreciable length of time even without breathing (Yadav & Rachna, 1998).

Correspondence
Jelastin D.Prabu
E-mail:prabueve@gmail.com, Ph. +9199436 08131

Mobility is a task-specific assessment consisting of two major elements: The range of motion required to perform the task with good technique. The ability to generate forces needed for athletic performance within that full range of motion, including its terminal ends. Sports, recreational activities and other daily physical practices can result in reduced range of movement in any participating joint. When the joint is unable to move through its full range, we call it compromised. Mobility work reduces the potential body imbalances inherent in our athletic and recreational pursuits. For example, it's widely accepted that running for distance shortens the hamstrings, calf muscles and hip flexors, resulting in decreased free movement in simple full range exercises, such as bodyweight squats. Well documented is the compromised range produced by heavy weight lifting and body building strength sports yet, properly conducted, weight training can improve range of motion (Zijlstra et al. 2009).

Volleyball is played by more than sixty million people in more than sixty countries. In Eastern Europe, Asia and South America top games draws crowds, the size of which rival those at soccer matches. Volleyball is considered as a top level competitive sport in more than twenty countries. The game of Volleyball was invented in 1895 by William, G. Morgan who worked for the Y.M.C.A in Holyoak, Massachusetts. His early form of the game was designed to provide mild exercise for large groups of businessmen. This original game was very

simple any number of players batted a basketball bladder backward and forward over a tennis net which was fixed at a height of six feet. Since then the game has developed and spread worldwide. The main reason of its popularity was it can be played indoors and outdoors, need little space compared to other games, and it can be played by both sexes and over a considerable age range. Play can be tremendously varying standards from a purely recreations level on the beach and in the park, through all levels of clubs and school level competitions, right up to international level. The way in which the game is played now is a far away from that designed by William G Morgan. Decades of competition have produced well performed skills and a steady development of new tactics as coaches strive for ever higher standard of play (McGown, 1994).

Methodology

The purpose of the study was to find out the effect of yogic packages and mobility training on selected physiological variables among volleyball players. To achieve the purpose of the present study, sixty men volleyball players from Kanyakumari district, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of twenty players each. Group I acted as Experimental Group I (Yogic packages), Group II acted as Experimental Group II (Mobility training) Group III acted as control group. Pre test was conducted for all the subjects on selected physiological variables. This initial test scores formed as pre test scores of the subjects. The duration of experimental period was 12 weeks. After the experimental treatment, all the subjects were tested on their physiological variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

Results

Table I. Computation of analysis of covariance of mean of yogic packages, mobility training and control groups on resting pulse rate

	Yogic packages	Mobility training	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	71.90	72.05	72.06	**BG**	0.30	2	0.15	0.36
				WG	23.70	57	0.41	
Post-Test Means	68.25	69.85	71.85	**BG**	130.13	2	65.06	128.55*
				WG	28.85	57	0.50	
Adjusted Post-Test Means	68.25	69.85	71.85	**BG**	129.52	2	64.76	125.97*
				WG	28.78	56	0.51	

An examination of table - I indicated that the pre test means of yogic packages, mobility training and control groups were 71.90, 72.05 and 72.06 respectively. The obtained F-ratio for the pre-test was 0.36 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the yogic packages, mobility training and control groups were 68.25, 69.85 and 71.85 respectively. The obtained F-ratio for the post-test was 128.55 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the yogic packages, mobility training and control groups were 68.25, 69.85 and 71.85 respectively. The obtained F-ratio for the adjusted post-test means was 125.97 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on Resting pulse rate. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-II.

Table II. The scheffe's test for the differences between the adjusted post test paired means on resting pulse rate

Adjusted Post-test means			Mean Difference	Required CI
Yogic Packages	Mobility Training	Control Group		
68.24	69.85	---	1.61*	0.58
68.24	---	71.85	3.61*	
---	69.85	71.85	2.00*	

** Significant at 0.05 level of confidence*

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of yogic packages and mobility training group (1.61), yogic packages and control group (3.61) and mobility training and control group (2.00) at 0.05 level of confidence with the confidence interval value of 0.58. The pre, post and adjusted means on Resting pulse rate were presented through bar diagram for better understanding of the results of this study in Figure-I.

Figure I. Pre post and adjusted post test differences of the, yogic packages, mobility training and control groups on resting pulse rate

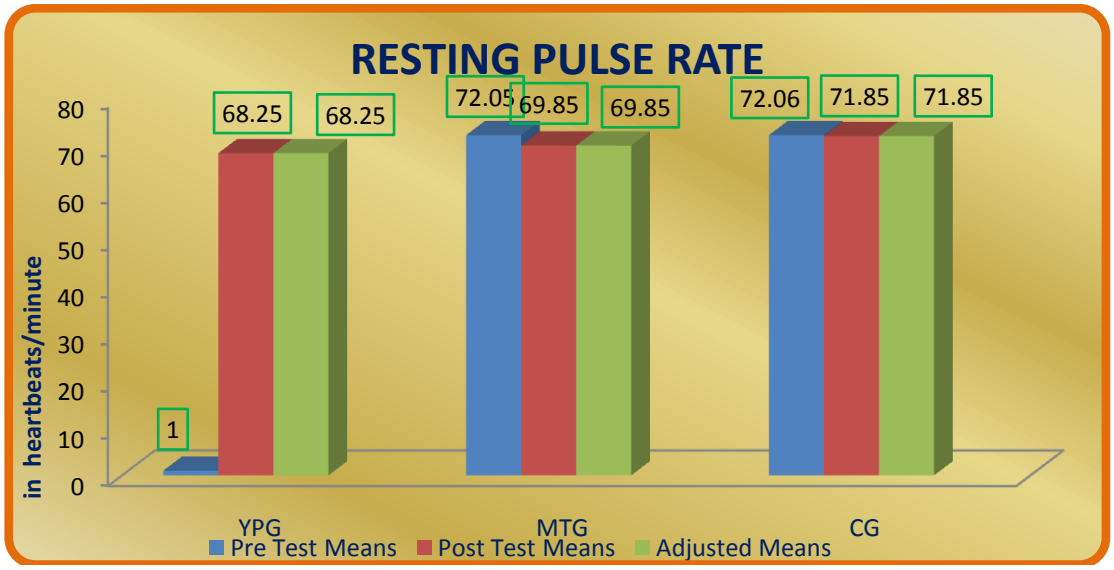


Table II. Computation of analysis of covariance of mean of yogic packages, mobility training and control groups on systolic blood pressure

	Yogic Packages	Mobility Training	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	121.00	121.05	121.06	**BG**	0.03	2	0.01	0.03
				WG	29.90	57	0.52	
Post-Test Means	118.05	119.10	121.10	**BG**	96.03	2	48.01	133.18*
				WG	20.55	57	0.36	
Adjusted Post-Test Means	118.04	119.10	121.10	**BG**	96.81	2	48.40	152.98*
				WG	17.71	56	0.31	

An examination of table - II indicated that the pre test means of yogic packages, mobility training and control groups were 121.00, 121.05 and 121.06 respectively. The obtained F-ratio for the pre-test was 0.03 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the yogic packages, mobility training and control groups were 118.05, 119.10 and 121.10 respectively. The obtained F-ratio for the post-test was 133.18 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the yogic packages, mobility training and control groups were 118.04, 119.10 and 121.10 respectively. The obtained F-ratio for the adjusted post-test means was 152.98 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on systolic blood pressure. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table III.

Table III. The scheffe's test for the differences between the adjusted post test paired means on systolic blood pressure

Adjusted Post-test means			Mean Difference	Required CI
Yogic Packages	Mobility Training	Control Group		
118.04	119.10	---	1.06*	0.45
118.04	---	121.10	3.06*	
---	119.10	121.10	2.00*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table III proved that there existed significant differences between the adjusted means of yogic packages and mobility training group (1.06), yogic packages and control group (3.06) and mobility training and control group (2.00) at 0.05 level of confidence with the confidence interval value of 0.45. The pre, post and adjusted means on systolic blood pressure were presented through bar diagram for better understanding of the results of this study in Figure-II.

Figure II. Pre post and adjusted post test differences of the, yogic packages, mobility training and control groups on systolic blood pressure

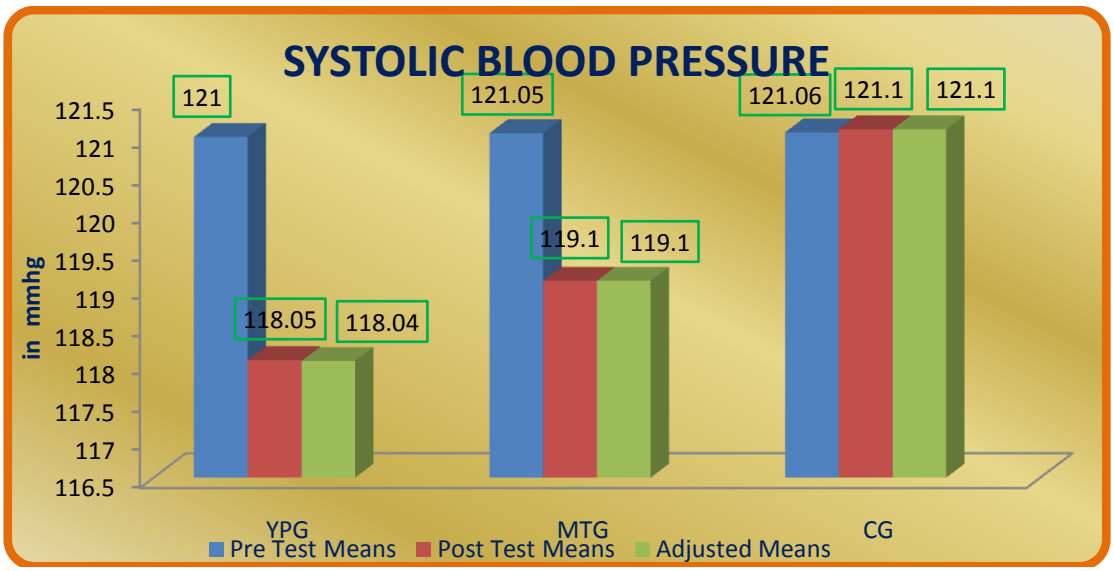


Table IV. Computation of analysis of covariance of mean of yogic packages, mobility training and control groups on diastolic blood pressure

	Yogic packages	Mobility training	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	80.70	80.90	81.00	**BG**	0.93	2	0.46	0.73
				WG	36.00	57	0.63	
Post-Test Means	76.75	79.10	81.15	**BG**	193.90	2	96.95	211.73*
				WG	26.10	57	0.45	
Adjusted Post-Test Means	76.74	79.11	81.13	**BG**	192.63	2	96.31	210.42*
				WG	25.63	56	0.45	

An examination of table - IV indicated that the pre test means of yogic packages, mobility training and control groups were 80.70, 80.90 and 81.00 respectively. The obtained F-ratio for the pre-test was 0.73 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the yogic packages, mobility training and control groups were 76.75, 79.10 and 81.15 respectively. The obtained F-ratio for the post-test was 211.73 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the yogic packages, mobility training and control groups were 76.74, 79.11 and 81.13 respectively. The obtained F-ratio for the adjusted post-test means was 210.42 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on diastolic blood pressure. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-V.

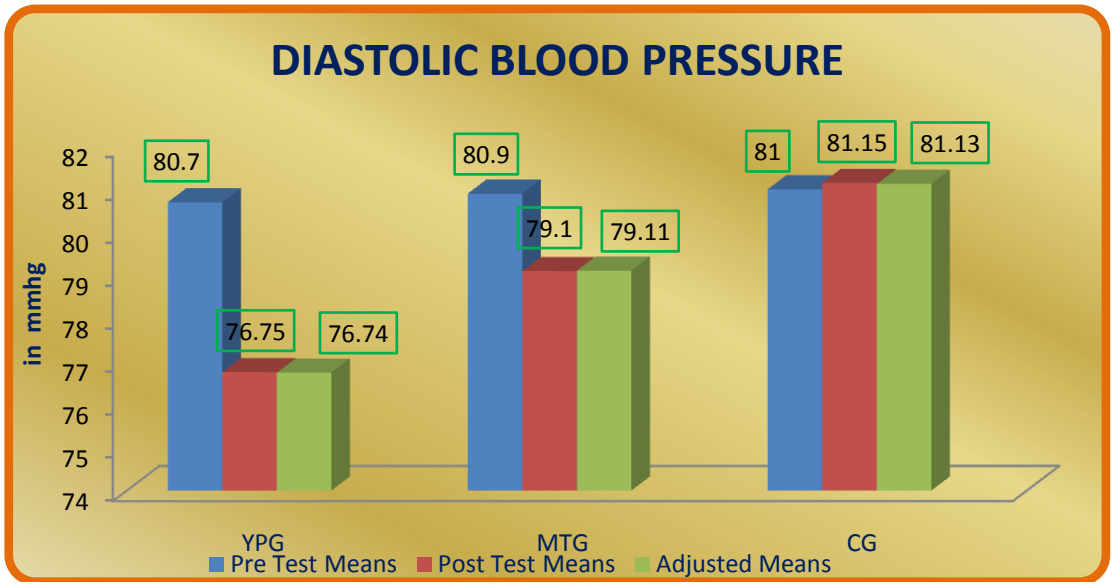
Table V. The scheffe's test for the differences between the adjusted post test paired means on diastolic blood pressure

Adjusted Post-test means			Mean Difference	Required CI
Yogic packages	**Mobility training**	**Control Group**		
76.74	79.11	---	2.37*	0.54
76.74	---	81.13	4.39*	
---	79.11	81.13	2.02*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table V proved that there existed significant differences between the adjusted means of yogic packages and mobility training group (2.37), yogic packages and control group (4.39) and mobility training and control group (2.02) at 0.05 level of confidence with the confidence interval value of 0.54. The pre, post and adjusted means on diastolic blood pressure were presented through bar diagram for better understanding of the results of this study in Figure-III.

Figure III. Pre post and adjusted post test differences of the, yogic packages, mobility training and control groups on diastolic blood pressure



Conclusions

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

1. The yogic packages group had shown significant improvement in all the selected physiological variables among volleyball players after undergoing yogic packages for a period of twelve weeks.
2. The mobility training group had shown significant improvement in all the selected physiological variables among volleyball players after undergoing mobility training for a period of twelve weeks.
3. The yogic packages had shown significant differences on resting pulse rate, systolic blood pressure and diastolic blood pressure than the mobility training and control groups.

References

1. Andre Van Lysebeth, (1987). *Yoga Self – Taught*, Delhi: Tarage Paper Back.
2. Asai.K. and Rane .Y.V, (2011). Asanas and lezium Programme on Selected Physical Fitness Variables of School Boys. *Entire Research National Quarterly Research Journal*, 3(1) p25- 31.
3. Balaji, P.A., Varne, S.R. & Ali, S.S. (2012). Physiological effects of yogic practices and transcendental meditation in health and disease. *N Am J Med Sci.* 4(10):442-8.
4. Barrow, H. M. & McGee, R. M. (1979). *A Practical Approach to Measurement in Physical Education*, Philadelphia: Lea and Febiger, p. 1.
5. Chandrasekaran.K (2003). *Yoga for Health*, Delhi; Khel Sathiya Kendra.
6. Chatterjee,F.,Bruce,S,A.,Woldege,R,C. (2010). Effect of yogic Exercises on human Growth hormone in a middle aged group: a pilot study. *Yoga Mimamsa a Quarterly Journal*, vol XLII.1, PP.40-47.
7. Chen, C.H., Nosaka, K., Chen, H.L., Lin, M.J., Tseng, K.W. & Chen, T.C. (2011). Effects of flexibility training on eccentric exercise-induced muscle damage. *Med Sci Sports Exerc*. 43(3):491-500.
8. Chen, K.M., Chen, M.H., Hong, S.M., Chao, H.C., Lin, H.S., & Li, C.H. (2008). Physical fitness of older adults in senior activity centres after 24-week silver yoga exercises. *J Clin Nurs.* 17(19):2634-46.
9. Chidambara Raja.S. (2014). Effect of Yogic Practices and Aerobic Exercises on Strength Endurance Self-Concept and Blood Pressure. *International Journal of Recent Research and Applied Studies*, 1, 6(7), 33 - 36.
10. Christina, B., Ragonesi, B.S. & James, C. G., (2012). Short-term, Early Intensive Power Mobility Training: Case Report of an Infant at Risk for Cerebral Palsy. Pediatr Phys Ther. 2012, 24(2): 141–148.
11. Dick Frank W. (1997). *Sports Training Principles*, London: A&C Black Publishers Ltd.,
12. Eugene S.Rawles, (1997). *Yoga for Beauty and Health.* New York: Parker Publishing CompanyInc.
13. McGown, Carl. (1994). Science of coaching Volleyball. Campaign, Illinois: Human kinetics publishers, Inc.
14. Thirumoolar (1962). *Thirumanthram*, Madras: Varthaman Publication.
15. Yadav, Y.P. & Rachna (1998). *Art of Yoga*. India: Friends Publications.