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Influence of Yoga on Resting Heart Rate and Breath Holding Time on College Kabaddi Players

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Abstract

The purpose of this study was to find out the influence of yoga on resting heart rate and breath holding time among college men Kabaddi Players. To achieve the purpose of the present study 30 players from Government College, Chittur, Palakkad were selected. The subjects at random and their ages ranged from 18 to 23 years. The subjects were divided into two equal groups. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n= 30) were randomly assigned to two equal groups of fifteen men players each. The groups were assigned as yoga and control groups in an equivalent manner. Resting heart rate was assessed by blood pressure monitor and breath holding time was assessed by nose clip hold method. The experimental group participated for a period of six weeks and the post-tests were conducted. The variable to be used in the present study was collected from all subjects before they have to treat with the respective treatments. It was assumed as pre-test. After completion of treatment they were tested again as it was in the pre-test on all variables used in the present study. This test was assumed as post-test. Analysis of covariance (ANCOVA) was used to test the treatment effect of the training programmes on all the variables used in the study. It was observed that the six weeks of yoga have significantly improved the resting heart rate and breath holding time among college men kabaddi players.

Keywords: Yoga, Resting Heart Rate, Breath Holding Time, Kabaddi.

Introduction

Yoga is as old as civilisation. Early Upanishads, the Bhagavadgita and the Yoga sutras of Patanjali are universally accepted as constituting the verbal foundation of the Yoga tradition. Among these, the Yoga Sutras provide the basis and inspiration for most of todays tradition of Yoga. In its recorded history and continuous evolution, Yoga has come to represent not only the ultimate goal, but also the many practices, techniques, methods and ways that to move towards that goal. Thus the literature includes numerous yogic paths. Yoga's classical definition is derived from the Sanskrit root "Yuj". Yoga represents the study, path and the means to proceed and also the absolute aim, which includes the following core concepts: the union of opposites, the effect the outside world has on the body, the yearning for and seeking of form of liberation; the merging of the individual consciousness with the Universal consciousness and the interest of discovering and attaining one's true self. The science of yoga works on physical, mental, emotional, psychic and spiritual aspects of a person. When imbalance is experienced at this level, the organs, muscles and nerves no longer function in harmony, rather they at in opposition to each other. Therefore yoga aims at bringing the different bodily functions into perfect co-ordination so that they work for the good of the whole body. Yoga is one of India's wonderful gifts to mankind. One of its valuable qualities is that it builds up a store of physical health through the practice of a system of exercises called asanas which keep the body cleansed and fit. Yoga believes that exercise is essential for speedy removal of toxins and for keeping blood circulation and all internal processes functioning smoothly. Yoga is a science and it is based on observation and experiment. This method of observation and experiment is regarded in the west as a distinctly modern innovation, but as a matter fact it was adopted in India in very ancient time by the 'ishis. Through the process of close observation and constant experiment they discovered the fine forces of nature, as also the laws that govern our physical, mental and spiritual being (Atkinson & Permuth, 2009).

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Methodology

The purpose of this study was to find out the influence of yoga on resting heart rate and breath holding time among college men Kabaddi Players. To achieve the purpose of the present study 30 players from Government College, Chittur, Palakkad were selected. The subjects at random and their ages ranged from 18 to 23 years. The subjects were divided into two equal

groups. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n= 30) were randomly assigned to two equal groups of fifteen men players each. The groups were assigned as yoga and control groups in an equivalent manner. Resting heart rate was assessed by blood pressure monitor and breath holding time was assessed by nose clip hold method. The experimental group participated for a period of six weeks and the post-tests were conducted. The variable to be used in the present study was collected from all subjects before they have to treat with the respective treatments. It was assumed as pre-test. After completion of treatment they were tested again as it was in the pre-test on all variables used in the present study. This test was assumed as post-test. Analysis of covariance (ANCOVA) was used to test the treatment effect of the training programmes on all the variables used in the study.

Results

Table 1. *Computation of mean and analysis of covariance on resting heart rate on experimental and control groups*

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	73.86	74.60	BG	4.03	1	4.03	2.20
			WG	51.33	28	1.83	
Post Test Mean	71.06	73.80	BG	56.03	1	56.03	47.06*
			WG	33.33	28	1.19	
Adjusted Post Mean	71.04	73.82	BG	53.63	1	53.63	43.68*
			WG	33.15	27	1.22	

* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value of resting heart rate of experimental and control groups were 71.04 and 73.82 respectively. The obtained F-ratio of 43.68 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on resting heart rate. The above table also indicates that both pre and post test means of experimental and control groups also differ significantly.

Figure I. Show the mean values on resting heart rate of yoga and control groups

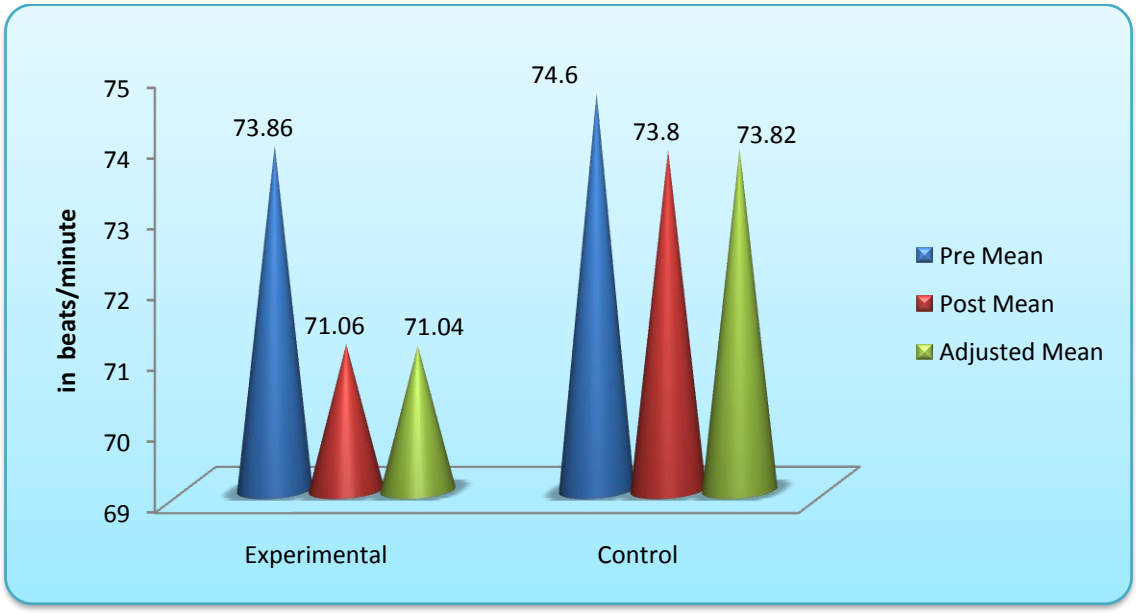


Table 2. *Computation of mean and analysis of covariance on breath holding time of experimental and control groups*

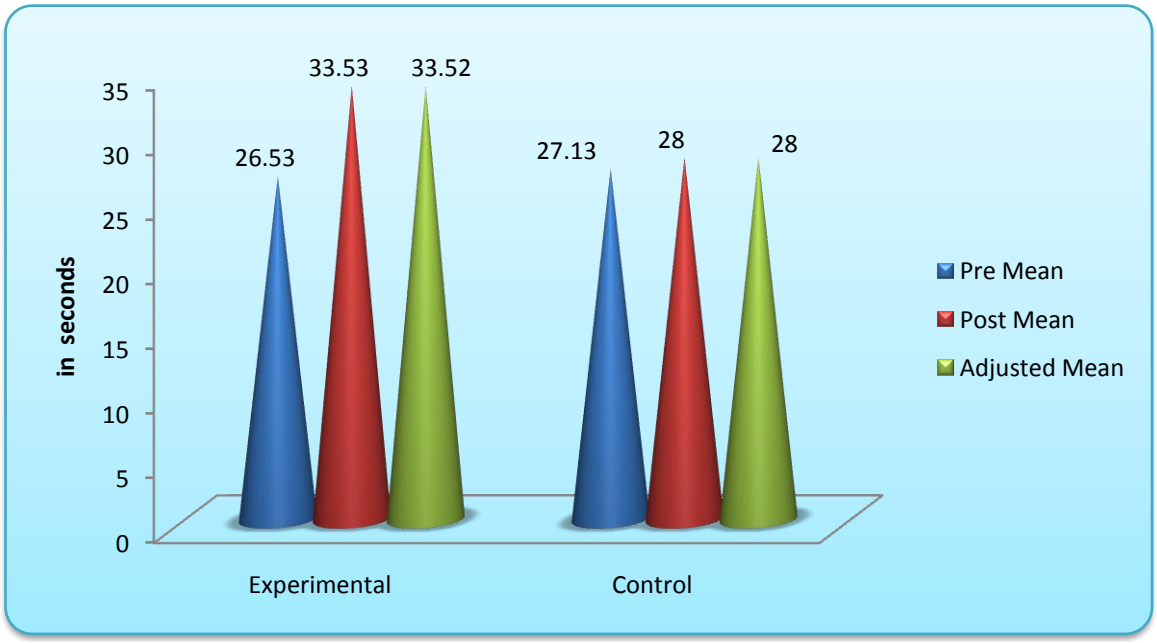
	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	26.53	27.13	BG	2.70	1	2.70	0.22
			WG	343.46	28	12.26	
Post Test Mean	33.53	28.00	BG	229.63	1	229.63	70.09*
			WG	91.73	28	3.27	
Adjusted Post Mean	33.52	28.00	BG	226.94	1	226.94	66.87*
			WG	91.61	27	3.39	

* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value of breath holding time of experimental and control groups were 33.52 and 28.00 respectively. The obtained F-ratio of 66.87 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on breath holding time. The above table also indicates that both pre and post test means of experimental and control groups also differ significantly.

Figure II. Shows the mean values on breath holding time of yoga and control groups



Conclusion

1. It was observed that the six weeks of yoga have significantly improved the resting heart rate and breath holding time among college men kabaddi players.

References

1. Atkinson, N,L. & Permuth, L. R. (2009). Benefits, barriers, and cues to action of yoga practice: a focus group approach. *Am J Health Behav.* Jan-Feb;33(1):3-14
2. Balasubramaniam B., Pansare Ms (1991). Effect of yoga on aerobic and anaerobic power of muscles, *Indian J Physiol Pharmacol*. 281-182.
3. Baljinder, B., Kanwaljeet, S., and Parminder . K. (2009). Effects of Kapalbhati on Peak Expiratory Flow Rate and Pulse Rate. International Journal of Sports Science and Engineering Vol. 03.No. 02, pp. 077-084

4. Malik, S., Shah, M., Hasan, S., and Bilal, M. (2011). The Physiological Responses of Yogic Breathing Techniques: A Case-Control Study. JEP;14(3):74-79.
5. Manjunath and Shirley, Telles (2001). Improved Performance in the Tower of London test following yoga, *Indian J Physiol Pharmacol*, 45(3):351-354.
6. Nandi, S., Adhikari, H., & Bera, T.K. (2004). Effects of Aerobic exercise, Yogic Practice and the combination of both on Cardio respiratory endurance. Yoga Mimamsa, Vol.XXXV, No.3 and 4: 152-159.
7. Pramanik, T., Sharma, H,O., Mishra, S., Mishra,A., Prajapati, R., and Singh S. (2009). Immediate effect of slow pace bhastrika pranayama on blood pressure and heart rate. J Altern Complement Med;15(3):293-5
8. Prasad, E, Rao. (2002). Complete Handbook of Kabaddi. Vizianagaram: Jagadamba publications.
9. Raghuraj, P., Ramakrishnan, A,G., Nagendra, H,R., Telles, S. (1998). Effect of two selected yogic breathing techniques of heart rate variability. Indian J Physiol Pharmacol;42(4):467-72.
10. Rajakumar, J. (2010). The Impact of Yogic Practices and Physical Exercises on Selected Physiological Variables among the Inter-Collegiate Soccer Players. Journal for Bloomers of Research, Vol. 2, No. 2)
11. Raju, P. S., Madhavi, S., Prasad, K. V., Reddy, M. V., Reddy, M. E., Sahay, B. K., & Murthy, K. J. (1994). Comparison of effects of yoga & physical exercise in athletes. *Indian Journal of Medical Research 100*, 81-86.