ISSN: 2349 - 4891
International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effects of Selected Yogic Practices and Physical Exercises on Selected Motor Ability Components and Physiological Variables for High School Boys

Dr. R. Jagathesan

Guest Lecturer, Department of Physical Education Bharathidasan University, Tiruchirappalli, Tamilnadu, India.

Received 3rd September 2017, Accepted 1st November 2017

Abstract

The purpose of the study was to examine the effects of selected yogic practices and physical exercises on selected motor ability components and physiological variables for high school boys. For the study 100 student's age ranging from 12 to 15 were selected for a 6 weeks yogic practices and physical exercises. The experimental design used for this study was a random group design. The selected subjects were divided into four groups of 25 each, namely Control Group (Group A), Physical Exercise Group (Group B), Yogic Practice Group (Group C) and Physical Exercise and Yogic Practice Group (Group D). The experimental groups (Groups B, C&D) underwent training for a period of six weeks whereas the control group maintained their routine activities and no special training was given. The subjects of the four groups were tested using standardized tests and procedures on selected motor ability components and physiological variables before and after the training period to find out the effects of the training. The data pertaining to selected motor ability components and physiological variables were analyzed by ANCOVA at P<0.05 and it concluded that experimental group showed improvement than control group.

Keywords: Yogic Practices and Physical Exercises, Agility, Cardio Respiratory Endurance and School Boys.

Introduction

Human beings are products of a highly technological era, surrounded by machines designed to sieve every imaginable purpose. But, when a machine breaks down, it does not have the capacity to repair itself, no matter how advance or well-designed it may be. We must either replace the item, or seek out the help of someone with specialized knowledge to fix the faulty machine. But one machine does exist that comes with its own built-in and highly specialized repair mechanism: The Human Body. The human body is an amazing creation. Countless events are occurring simultaneously in perfect coordination, allowing complex functions such as seeing, hearing, smelling, tasting, breathing and thinking to continue without a conscious effort. Yoga is in its versatility, allowing practitioners to focus on the physical, vital, mental, emotional, psychic and spiritual. Yoga is an education that completely provides human beings good health for better living. Yoga is a science of right living and as such, is intended to be incorporated in daily life. Developed in India, Yoga is a psychological discipline with roots going back about 5,000 years. Today, most Yoga practices in the West focuses on the physical postures called "Asanas", breathing exercises called "Pranayama" and "Meditation". However, there is more to it than that, and the deeper you go the richer and more diverse the tradition becomes. The word "Yoga" means imion. Linguistically, it is related to the Old English "yoke". Yoga is said to be an integral subjective science. Its division into spiritual, mental and physical cannot be separated from each other. Yoga is equanimity, serenity and control of the senses and the mind. It is all embracing, all-inclusive and Universal in its application and utility. Yoga is not a religion nor is it a mystic cult. Yoga is a spiritual technique, a way, a path, a method that has something to offer to everyone, religious and the non-religious, men and women irrespective of age and faith. Yoga is a way to a healthier, happier and harmonious life.

Correspondence
Dr.R.Jagathesan
E-mail: rjagathesan6@gmail.com, Ph. +9199448 09316

Hypotheses

1. There would be significant improvement on selected Motor Ability Components and Physiological Variables that are influenced by Yogic Practices and Physical Exercises.
2. The experimental groups would be significant in the training outcomes more than the control group.
3. The experimental groups would be more significant group in the training out comes when compared to the Control Group.

Delimitations

1. The study was confined to the school boys aged between 12-15 years.
2. Only male subjects were taken for this study.

3. This study was conducted only on 100 selected healthy school boys.
4. The training period was limited to six weeks only.
5. Only selected Motor Ability Components and Physiological Variables were selected for the study.

Motor Ability Components

1. Agility

Physiological Variables

2. Cardio Respiratory Endurance

Methodology

Hundred healthy boys from the Government Boys High Secondary School, Musiri, Tamilnadu were randomly selected, their age ranging between 12-15 years. With the help of a medical officer, special care was taken to find out if they were medically fit enough to undergo the training schedule of yoga and physical exercise.

Experimental Design

The experimental design used for this study was a random group design. The selected subjects were divided into four groups of 25 each, namely Control Group (Group A), Physical Exercise Group (Group B), Yogic Practice Group (Group C) and Physical Exercise and Yogic Practice Group (Group D). The experimental groups (Groups B, C&D) underwent training for a period of six weeks whereas the control group maintained their routine activities and no special training was given. The subjects of the four groups were tested using standardized tests and procedures on selected motor ability components and physiological variables before and after the training period to find out the effects of the training.

Administration of Treatment

Specifically designed physical exercises and yogic practices were selected in consultation with experts from respective fields. The Experimental Groups B, C & D practiced for six weeks in the evening from 4.30 p.m to 6.00 p.m, a ninety minute schedule, for six days a week excluding Sundays. Physical exercises and yogic practices were demonstrated and were explained to the subjects and their doubts regarding physical exercises and yoga were clarified. The subjects were also instructed to be cautious regarding injuries while undergoing the training. Care was taken by the investigator to check the training load of physical exercises and yoga, especially for the Experimental Group D as this group had to practice yoga and physical exercises within the stipulated ninety minutes.

Description of the selected Yogic Practices

A package of Yogic Practices was designed with the help of experts keeping in mind the purpose of the study. The following is the package of Yogic Practices.

1. Asanas. 2. Tadasana. 3. Vrkasana. 4. Trikonasana. 5. Artha Chakrasana. 6. Padahasthasana.
7. Padmasana. 8. YogaMudra. 9. Vajrasana. 10. Supta Vajrasana. 11. Paschimottanasana.
12. Uthirasana 13. Navasana. 14. Bhujangasana. 15. Salabasana. 16. Savasana.

Pranayama

1. Abdominal Breathing. 2. Thorasic Breathing. 3. Clavicular Breathing. 4. Nadisuddhi. 5. Bhastrika. 6. Ujjayi. 7. Kapalabhati.

Description of Physical Exercises

The following were the specific physical exercises designed keeping in mind the purpose of the study.

Agility

1. Side Shuffle. 2. Zigzag Drill. 3. Four Comer Drill

Cardio Respiratory Endurance

1. On the Spot Running. 2. on the Spot Jogging. 3. Skipping.

Statistical Techniques

Analysis of Covariance was used to find out the significant effect of various groups and Scheffe's post hoc test was employed to find out the best group among the four.

Table 1

Analysis of Co-Variance on Agility Between Experimental Group I, II, III and Control Group of School Boys

Group Mean					Sum of Squares	df	Mean Sum of Squares	F Ratio
Test	CG	PEG	YPG	PEYPG				
Pre Test	16.39	16.47	16.45	16.22	B:0.955	3	0.31	0.47
					W: 64.36	96	0.67	
Post Test	16.82	15.99	16.43	15.51	B: 24.13	3	8.04	32.36
					W: 23.86	96	0.24	
Adjusted Post Test	16.82	15.99	16.43	15.51	B:24.13	3	8.04	60.49
					W: 12.65	95	0.13	

The above table shows that in the pre-test mean result of Agility there is no significant difference among the four groups namely the Control Group (Group A), the Physical Exercise Group (Group B), the Yogic Practice Group (Group C) and the Physical Exercise & Yogic Practice Group Group D) (P>0.005). The post-test mean Agility rate shows that there is significant difference among the four groups.(P<0.001). The adjusted post-test mean Agility rate shows that Physical Exercise & Yogic Practice Group (Group D) differs significantly than the Physical Exercise Group (Group B) which is significant than the Yogic Practice Group (Group C). (P<0.001).

Table II
Scheffe's post-hoc test for 6x10 meters shuttle run

Group	N	1	2	3	4
Physical Exercise &Yogic Practice Group	25	15.51	-	-	-
Physical Exercise Group	25	-	15.99	-	-
Yogic Practice Group	25	-	-	16.43	-
Control Group	25	-	-	-	16.82
Significance		**1.000**	**1.000**	**1.000**	**1.000**

*significance at .05 level of confidence

The result of the Scheffe's post-hoe test shows that mean Speed rate Physical Exercise & Yogic Practice Group (Group D) is better (15.5100) than the Physical Exercise Group (Group B) (7.9448) which is better than the Yogic Practice Group (Group C) (16.4380).

Table III
Analysis of Co-Variance on Cardio Respiratory Endurance Between Experimental Group I, II, III and Control Group of School Boys

Group Mean					**Sum of Squares**	**df**	**Mean Sum of Squares**	**F Ratio**
Test	**CG**	**PEG**	**YPG**	**PEYPG**				
Pre Test	3.71	3.82	3.76	3.81	B:0.20	3	0.06	0.50
					W: 13.00	96	0.13	
Post Test	4.06	3.37	3.86	3.59	B: 6.88	3	2.29	37.83
					W: 5.81	96	0.06	
Adjusted Post Test	4.03	3.37	3.86	3.59	B:6.88	3	2.29	127.18
					W: 1.73	95	0.01	

The above table shows that in the pre-test mean result of Cardio Respiratory Endurance there is no significant difference among the four groups namely the Control Group (Group A), the Physical Exercise Group (Group B), the Yogic Practice Group (Group C) and the Physical Exercise & Yogic Practice Group (Group D) (P>0.005). The post-test mean of the Cardio Respiratory Endurance rate shows that there is significant difference among the four groups.(P<0.001). The adjusted post-test mean of the Cardio Respiratory Endurance rate shows that the Physical Exercise Group (Group B) differs significantly than the Physical Exercise & Yogic Practice Group (Group D) which is significant than the Yogic Practice Group (Group C). (P<0.001).

Table IV
Scheffe's post-hoc test for cardio respiratory endurance rate

Group	N	1	2	3	4
Physical Exercise &Yogic Practice Group	25	3.37	-	-	-
Physical Exercise Group	25	-	3.59	-	-
Yogic Practice Group	25	-	-	3.86	-
Control Group	25	-	-	-	4.06
Significance		**1.000**	**1.000**	**1.000**	**1.000**

*significance at .05 level of confidence

The result of the Scheffe's post-hoc test shows that the mean Cardio Respiratory Endurance rate of the Physical Group (Group B) is lower (3.3776) than the Physical Exercise & Yogic Practice Group (Group D) (3.5976) that is lower than that of the Yogic Practice Group (Group C) (3.8648).

Discussion on Findings

In the present study, the experimental groups were tested on the selected Physical and Physiological Variables.

Agility

The result on Agility shows that all the three experimental groups showed significant change. The Physical Exercise &Yogic Practice Group showed more significance when compared to the Physical Exercise Group and the Yogic Practice Group. The Control Group showed no significance.

Cardio Respiratory Endurance

All the three experimental groups showed significant improvement in Cardio Respiratory Endurance. The Physical Exercise Group has a tendency to improve the Cardio Respiratory Endurance more than the Physical Exercise & Yogic Practice Group and the Yogic Practice Group. The Control Group showed no significant change.

Conclusion

1. The Physical Exercise &Yoga Group that practiced both Physical Exercise and Yoga (asanas and pranayama) had a better training effect on motor Ability components the compared to the other three groups.
2. The Physical Exercise Group (that practiced only Physical Exercise) had a better training effect on the Physiological Variable when compared to other three groups.

References

1. Abramowitz, Milton & Irene A. Stegun, eds.(1972). Handbook of Mathematical Functions, with Formulas, Graphs, and Mathematical Tables.Washington, D.C. : U.S. Government Printing Office.
2. Box ,George E.P.; William, G. Hunter & J. Stuart Haunter (1978).Statistics for Experimenters: An Introduction to
3. Design, Data Analysis, and Model Building.New York: John Wiley and Sons.
4. Cowen, V.&Admas t.(2005). "Physical and perceptual benefits of yoga asana practice: results of a pilot study".Journal of Bodywork and Movement Therapies.9:3:211-219.
5. Garret, Henry E.(1981). Statistics in Psychology and Education.Bombay :Feffer and Simons Ltd.
6. Harinath, K.et.al.(2004)."Effects of hatha yoga and omkarmeditation on cardiorespiratory performance, psychologic profile,and melatonin secretion".The Journal of Alternative and Complementary Medicine.10:2:261-268.
7. Joshi,L.N.; Joshi, V.D. &Gokhale, L.V.(1992)." Effect of short term „pranayama" practice on brethinh rate and ventilatory function of lung".Indian Jl. PhysiolPharmacol.36:2:105-108.