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Effects of Yogic Practices and Physical Exercise on Academic Achievement on Agility and Aerobic Capacity of Adolescent Boys

D. Soundarrajan
Part-time Research Scholar, Department of Physical Education, Karpagam University, Coimbatore, India
Dr. V. Perumal
Professor, Department of Physical Education, Karpagam University, Coimbatore, India

Abstract
Vishaw Gaurav (2011) conducted a study on Effects of Hatha Yoga Training on the Health-Related Physical Fitness. Bryan (2012) conducted a study on the effects of yoga on psychosocial variables and exercise adherence improving the physical activity Physical inactivity is a serious issue for the American public. The purpose of this study was to examine agility and aerobic capacity during and after yoga practice, physical exercise on academic year achievement. . Forty healthy men performed the following three types of training modalities, the first group underwent yoga practice alternative days, experimental group two underwent physical exercise on alternative days. These two experimental group trials were performed for three sets in a circuit pattern with four exercises, and the participants performed each set until exhaustion. To find the agility shuttle run test was used and aerobic power queen college step was used. Average and aerobic capacity throughout the exercise session was significantly higher with yogic practices and physical exercise. (P < 0.05); however, total agility were significantly greater in yogic practices and aerobic power were significantly greater in physical exercise. In contrast, there were significant differences in the total excess post-exercise among yogic practices and physical exercise. The results of this study suggest that agility were better improved through yogic practice and aerobic power is better improved through physical exercise.

Keywords: *yogic practices, physical exercise, agility, aerobic capacity*

1. Introduction

Yoga is an ancient Indian practice, first described in Vedic scriptures around 2500 B.C., which utilizes mental and physical exercises to attain samadhi, or the union of the individual self with the infinite. According to the first comprehensive textual description of yoga, *the*Yoga Sutras, written in the third century B.C., yoga is the cessation of thought waves in the mind. Hatha yoga, one of the many forms or paths of yoga, focuses on overall fitness through pranayama (breath-control exercises), asanas (yoga postures),and chanda *(*meditation). Like other forms of yoga, hatha yoga is purported to quiet the mind and focus the concentration; however, of all the yoga traditions, the importance of physical fitness is emphasized most in hatha yoga.Studies have shown that yoga practice can lead to improvements in hand-grip strength, agility and aerobic capacity. However, no research to date has addressed the effects of yoga practice and physical exercise on the agility and aerobic capacity aspects of physical fitness. Madanmohan et al (1983) studied the effect of shavasan and savitri pranayam (a yoga-breathing technique characterized byslow, rhythmical and deep breathing cycles) in trained subjects (yoga training > 1 year) and found significant decrease in agility. Shavasan alone has been shown to be effective in the treatment of hypertension (Datey et al 1969; Patel and North1975). (Madanmohan,1992). Joshi et al (1992) have also demonstrated that six weeks of pranayam breathing course resulted in improved ventilatory functions in the form of lowered respiratory rate. Similar beneficial effects were observed by Makwana et al (1988) after 10 weeks of yoga practice. Bera and Rajapurkar (1993) have reported that yoga training results in significant improvement in cardiovascular endurance and anaerobic threshold. Oken et al (2006) found that hatha yoga practices for 6 months by seniors (65-85 years) resulted in significant improvement in quality of life and physical measures compared to walking exercise and wait-list control groups.

2. Aim

The purpose of the study was to find out the effects of yogic practices and physical exercise on academic achievement on agility and aerobic capacity of adolescent boys.

3. Methods and Procedures

Healthy, young 40 subjects were recruited from salem district Govt. boys schools. No incentives were offered other than the yoga classes and physiologic testing. Following approval of our institutional Human Subjects Review Committee, written informed consent was obtained from 40 subjects (n=40) who volunteered to participate. The age range was 12–15 years (means ± SEM, 13.5 ±1.5). Subjects were expected to attend a 5 class per week for six week. Forty Subjects were randomly divided two equal groups n=20 experimental group I underwent yoga practices, n=20 experimental group II underwent physical exercise. The subjects were instructed to refrain from all other forms of exercise while participating in the training program. Additionally, no subject had known heart disease or significant recent joint or muscular injury, as determined by written medical history. All procedures were demonstrated prior to testing. Agility was measured by shuttle run test and aerobic capacity was measured by queen college step test. Data were statistically analyzed by paired '*t* 'tests, with results expressed as means ± SEM. Significance was accepted at the $p<0.05$ level.

4. Analysis of the Study

Variables		Mean ± S.D	Std. Error Mean	M.D	't' Ratio
Aerobic capacity (Ml / kg / per minute) In yogic practices group	PRE-TEST	40.45±1.40	0.37	2.06	21.21*
	POST-TEST	42.51±1.25	0.32		
Aerobic capacity (Ml / kg / per minute) In physical exercise group	PRE-TEST	40.33 1.36	.36	3.06	15.07*
	POST-TEST	44.01± 1.20	.31		

Table 1: Significance of Mean Gains / Losses between Pre and Post Test of Yogic Practices and Physical Exercise Group on Aerobic Capacity of Academic Achievement of Adolescent Boys Significant at 0.05 levels

The obtained't' ratio's for pre and post test mean difference in the yogic practices group aerobic capacity was (21.21) and physical exercise group aerobic capacity was (15.07) respectively. The obtainer' ratio is when compared with the table value of 2.14 for the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of confidence.

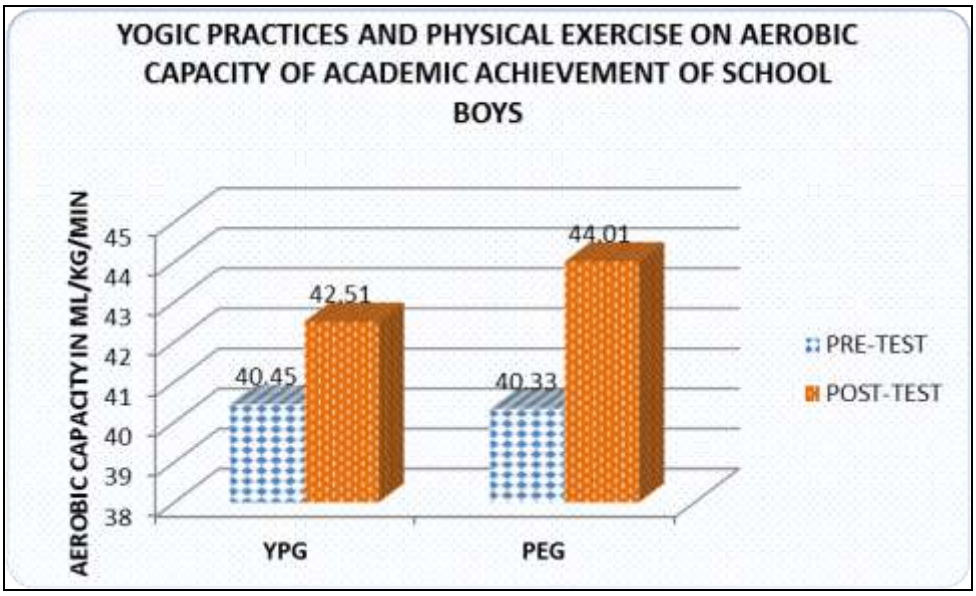

Figure 1

Variables		Mean ± S.D	Std. Error Mean	M.D	't' Ratio
Agility(in CM) In yogic practices group	PRE-TEST	12.67± .63	.16	1.77	13.36*
	POST-TEST	10.89± 0.52	.13		
Agility (in CM) In physical exercise group	PRE-TEST	12.73±0.60	0.15	0.88	6.29*
	POST-TEST	11.85±0.76	0.19		

Table 2: Significance of Mean Gains / Losses between Pre and Post Test of Yogic Practices and Physical Exercise Group on Agilty of Academic Achievement of Adolescent Boys Significant at 0.05 levels

The obtained't' ratios for pre and post test mean difference in the yogic practices group agility was (13.36) and physical exercise group agility was (15.07) respectively. The obtainer' ratio is when compared with the table value of 2.14 for the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of confidence.

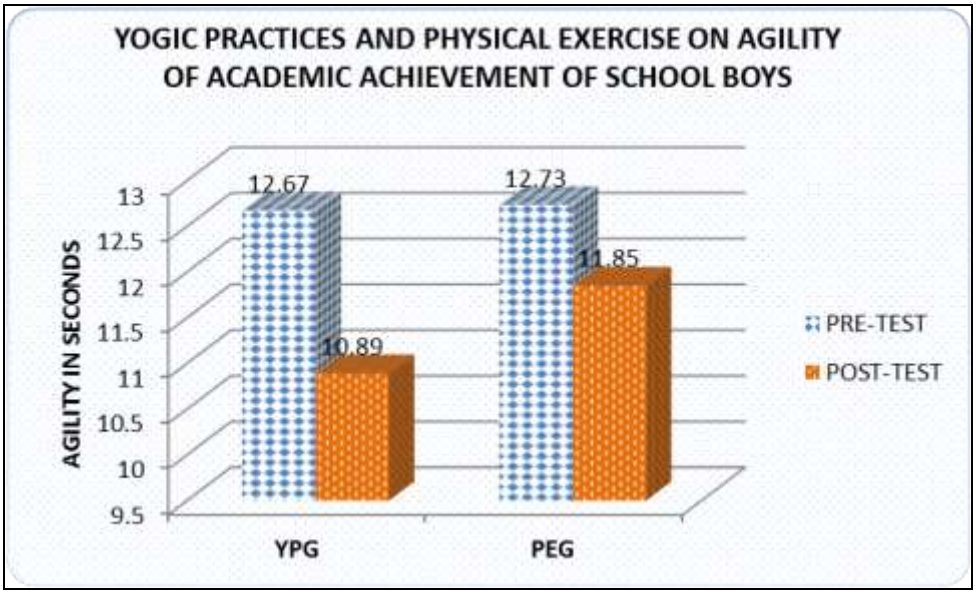

Figure 2

5. Result

1. Yogic Practices improved the aerobic capacity and agility of academic year achievement of adolescent boys.
2. Physical exercise training improved the aerobic capacity and agility of academic year achievement of adolescent boys.
3. Yogic Practices improved the agility better then the physical exercise of academic year achievement of adolescent boys.
4. Physical exercise improved the aerobic capacity better then the Yogic Practices of academic year achievement of adolescent boys.

6. Conclusion

Yogic practices improved agility and physical exercise improved aerobic capacity of academic year achievement of adolescent boys.

7. References

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