



EFFECTIVENESS OF YOGIC PRACTICES AND AEROBIC EXERCISES ON CARDIOVASCULAR ENDURANCE OF SECONDARY SCHOOL CHILDREN

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ABSTRACT :

The purpose of the study is to find out effect of yogic and aerobic exercises training on cardiovascular endurance of secondary school boys. For this purpose Sixty subjects (n=60) were randomly assigned to three equal groups of 20 subjects. The subjects of the study are studying in Morarji Desai Residential School, Chakkere, Channapatna Taluk, Ramangara District, Karnataka, India. The selected subjects were assigned in three equal groups namely Group-I YPTG (Yogic Practices Training Group); Group-II AETG (Aerobic Exercises Training Group) and Group-III CG (Control Group). Pre test scores were taken for all the subjects on cardiovascular endurance by administering cooper's 12 meters run/walk test in meters. Group-I trained yogic exercises and experimental Group-II trained in aerobic exercises for a period of 12 weeks. The post test scores were conduct on cardiovascular endurance after the treatment of yogic and aerobic exercises. The differences between pre and post mean scores on cardiovascular endurance were considered as the effect of experimental treatments. ANOVA and ANCOVA were used to determine the significance of the mean scores for cardiovascular endurance. Post hoc analysis was applied by using LSD test where the obtained F value was found significant and the level of significance was fixed at 0.05 level and 0.01 levels to test the formulated hypothesis. It was concluded that practicing of yogic practices group and aerobic exercises group were significantly improved cardiovascular endurance of secondary school boys. Therefore, the two methods of exercises are effective on improving the cardiovascular endurance of the secondary school boys.



KEYWORDS : Yogic practices, Aerobic exercises, Training, Leg explosive power, School boys .

1. INTRODUCTION

Fitness is the capacity to carry on with a full and healthy lifestyle. The completely fit individual has a healthy and happy point of view. Fitness is the young fellow's total need. It raises confidence and keeps man mentally alert. Physical fitness is fundamental for human beings to alter well with his condition as his mind and body are in finished congruity. Clarke et al. (1989) found that physical fitness is certainly not a static factor and it shifts from individual to individual and in a similar individual now and again relying upon variables.

A standout amongst the most critical parts of health-related fitness is the cardiovascular endurance or the aerobic limit of a person. Aerobic fitness can be characterized as the capacity to take in, transport, and use oxygen. Since aerobic fitness includes numerous essential organs and

frameworks, it educates much concerning the health of these parts and about the health when all is said in done. At the point when aerobic fitness is high, physical and mental health is upgraded.

Yogic practices are viable in tossing out the entirety of our body squanders and bring power over the body and organs are legitimate working of which depends our health and satisfaction. The yogic exercises improve mental power and health in controlling the sense organs. It expands the versatility of body and makes the body progressively dynamic and supple. The blood circulation happens all the more easily and legitimately and the body ends up able to do more work. It improves resistance power against diseases and do not enable any external issue to accumulate in the body, they keep the body free from diseases. The diverse yogic exercises clean the blood circulation, channel of body and circle blood freely to all pieces of body and enables keep body free from polluting influences. Yogic exercises are the best way to keep organs in legitimate working request.

The advantages of aerobic exercise and fitness incorporate improved circulation and respiration; decreased risk of heart diseases; improved fat metabolism and diminished body weight (fat free body mass); strengthened bones, ligaments and tendons; personality changes like upgraded self-idea and body image and emotional stability. The expanded limit and versatility related with aerobic fitness can add life to years.

Adling and Bangar (2017) find out the effect of aerobic training on cardio respiratory endurance and the results concluded that the aerobic training might be responsible for the improvement of cardio-respiratory endurance of college men. Sahu (2016) investigated the effect of asana and pranayama on cardiovascular endurance secondary school students. The result showed that the Asana and Pranayama showed significant improvement for development of cardiovascular endurance. Hosiso (2013) investigated the effect of aerobic exercise on improving cardiovascular endurance of Dilla University sedentary female community. The study concluded that moderate aerobic exercise has positive effect on improvement of cardiovascular endurance of sedentary female communities. Vivek (2013) examined the effect of aerobics exercises on cardiovascular endurance of school boys. The results concludes that aerobic exercises might be responsible for the improvement of cardio-vascular endurance of school boys. Padmanathan and Jhonjoseph (2011) conducted a study on the effect of low impact aerobic exercises on cardio respiratory endurance of male adolescents. The result of this study indicated that cardio respiratory endurance were significantly improved by practicing of low impact aerobic exercises. Praveenakumar, Bujurke and Rathod (2011) found the effect of Yogic pranayama and meditation on cardiovascular endurance of secondary level students and results concludes that experimental group who practiced yogic exercises with pranayama and meditation had significantly improved the endurance than that of control group.

Nowadays, ineffective yogic and aerobic exercises training for the developments of cardiovascular endurance seen as a gap for this study, yoga and aerobic exercises are the way to wind up mindful of all-round and wonderful development among school students in the present society. Thus, the specialist influenced an endeavour to investigate the experimental examination to know the impact of yogic practices and aerobic exercises on cardiovascular endurance among secondary school boys.

1.1 Statement of the Problem

The topic is selected to find out the effectiveness of yogic practices and aerobic exercises on cardiovascular endurance of secondary school boys.

1.2 Objective of the Study

The purpose and objective of the research is to establish the effectiveness of yogic practices and aerobic exercises on cardiovascular endurance of the secondary school boys.

1.3 Statement of Hypothesis

It was hypothesized that 12 weeks of yogic practice and aerobic exercises training would be a significant improvement of cardiovascular endurance of the secondary school boys.

2. METHODOLOGY

The purpose of the study is to find out the effect of yogic and aerobic exercises training on cardiovascular endurance of secondary school boys. For this purpose Sixty subjects (n=60) were randomly assigned to three equal groups of 20 subjects each. The subjects of the study are studying in Morarji Desai Residential School, Chakkere, Channapatna Taluk, Ramangara District, Karnataka, India. The selected subjects were assigned in three equal groups namely Group-I YPTG (Yogic Practices Training Group); Group-II AETG (Aerobic Exercises Training Group) and Group-III CG (Control Group). Pre test scores were taken for all the subjects on cardiovascular endurance by administering cooper's 12 meters run/walk test in meters. Group-I trained yogic exercises and experimental Group-II trained in aerobic exercises for a period of 12 weeks. The post test scores were conducted on cardiovascular endurance after the treatment of yogic and aerobic exercises. The differences between pre and post mean scores on cardiovascular endurance were considered as the effect of experimental treatments. ANOVA and ANCOVA were used to determine the significance of the mean scores for cardiovascular endurance. Post hoc analysis was applied by using LSD test where the obtained F value was found significant and the level of significance was fixed at 0.05 level and 0.01 levels to test the formulated hypothesis.

3. RESULTS AND DISCUSSION

Analysis of the effects of treatment of Yogic Practices Training Group (YPTG), Aerobic Exercises Training Group (AETG) and Control Group (CG) on Cardiovascular Endurance was presented in the following table.

Table-1: Analysis of Covariance on Cardiovascular Endurance among YPTG, AETG, and CG.

	YPTG	AETG	CG	Sources of Variance	Sum of Squares	df	Mean Squares	Obtained F value
Pre Test	2072.75 0	2169.10 0	2012.15 0	Between	97533.233	2	48766.617	0.35 ^{NS} (P=0.707)
				Within	7974522.10 0	5 7	139903.89 6	
				Total	8072055.33 3	5 9		
Post Test	2471.70 0	2502.60 0	2149.80 0	Between	1526948.40 0	2	763474.20 0	5.22** (P=0.008)
				Within	8338688.20 0	5 7	146292.77 5	
				Total	9865636.60 0	5 9		
Adjusted Post Test	2512.19 5	2450.01 3	2161.89 2	Between	1397232.54 9	2	698616.27 5	43.66** (P=0.000)
				Within	896085.659	5 6	16001.530	

^{NS}Not Significant; (df) 2, 57; *Significant at 0.05 is 3.15. **Significant at 0.01 is 4.98

The table shows the pre-test mean values of cardiovascular endurance of YPTG, AETG and CG groups are 2072.750, 2169.100 and 2012.150 respectively. The obtained 'F' ratio of 0.35 for pre-test mean scores of cardiovascular endurance is less than the table value 3.15 for df 2 and 57 required for significance at 0.05 level. The table also shows the post-test mean values of cardiovascular endurance of YPTG, AETG and CG groups are 2471.700, 2502.600 and 2149.800 respectively. The obtained 'F' ratio of 5.22 on post-test mean scores of cardiovascular endurance is greater than the table value 4.98 for df 2 and 57 required for significance at 0.01 level.

The table further shows that cardiovascular endurance of the secondary school boys was significantly improved due to 12 weeks of yogic and aerobic training as the obtained F value of 43.66 on adjusted means was greater than the required table F value of 4.98 at 0.01 level. Since significant F ratio was obtained, the results were further subjected to post hoc analysis using LSD test and results are presented in the Table-2.

Table-2: LSD Post Hoc Test Results on Cardiovascular endurance of secondary school boys

Groups			Mean Difference	Confidential Interval (CI)
YPTG	AETG	CG		
2512.195	2450.013		62.182	79.604
	2450.013	2161.892	288.121*	
2512.195		2161.892	350.303*	

* Significant at 0.05 level.

The post hoc analysis proved that "there was significant difference in the cardiovascular endurance between AETG & CG and YPTG & CG groups" The treatment groups were proved statistically by improving cardiovascular endurance among secondary school boys and the comparison between the treatment groups were not proved by any significant mean differences in improvement of cardiovascular endurance of the school boys. Hence the stated hypothesis was accepted for the said criterion variable that is cardiovascular endurance.

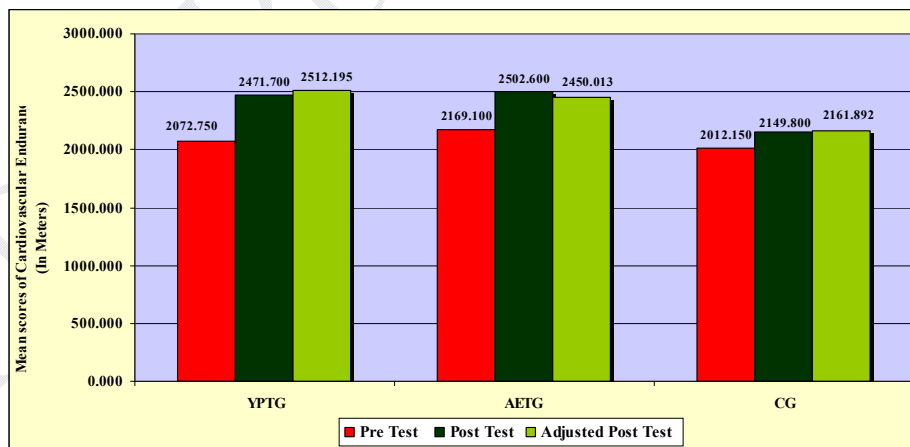


Fig.1: Bar diagram showing the comparison of pre, post and adjusted mean scores of cardiovascular endurance of YPTG, AETG and CG groups

4. CONCLUSION

The study concluded that practicing of yogic exercises and aerobic exercises groups significantly improved cardiovascular endurance of secondary school boys. The study suggested that yogic and aerobic exercises are an appropriate and easy approach for development of physical fitness especially cardiovascular endurance. Aerobics is important to strengthen heart and lungs, yoga is necessary to control and regulate breath, which is related to pranayama and meditation. Aerobics puts pressure on joints and increase the risk of joint injuries. Yoga strengthens the bones and joints. Yoga improves the immunity power of the body while aerobics boosts metabolism. The present results are concurred by previous investigations conducted by Adling and Bangar (2017) found that the aerobic training might be responsible for the improvement of cardio-respiratory endurance of college men. Sahu (2016) found Asana and Pranayama showed significant improvement for development of cardiovascular endurance. Hosiso (2013) concluded that moderate aerobic exercises have positive effect on improvement of cardiovascular endurance of sedentary female communities. Vivek (2013) concludes that aerobic exercises might be responsible for the improvement of cardio-vascular endurance of school boys. The study would provide a scientific base and guidance to the physical education teachers and educationists to design the curriculum by inclusion of yogic and aerobic exercises for teach and practice effectively to improve pleasant development of cardiovascular endurance among secondary school boys.

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