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 **EFFECT OF YOGIC PRACTICES AEROBIC TRAINING
AND COMBINED TRAINING ON FORCED EXPIRATORY
VOLUME OF ADOLESCENTS BOYS**

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Abstract : The purpose of the study was to find out the effect of yogic practices, aerobic training and combined training (combination of yogic practices and aerobic training) on forced expiratory volume of adolescent boys. To achieve the purpose of this study, sixty adolescent boys were selected randomly from new Modern Vidhya Mandhir Higher Secondary School, Puducherry. The subject's age ranged between 14 to 17 years. They were divided into four equal groups namely Group A, Group B, Group C and Group D, each group consisted of 15 subjects. Group 'A' underwent yogic practices, Group 'B' underwent aerobic training, Group 'C' underwent combined training (combination of yogic practices and aerobic training) five days per week for 12 weeks and Group 'D' acted as a control who did not involve in any special training apart from their daily routine. The forced expiratory volume was the selected variable for this study. The forced expiratory volume was assessed by Spirolab version three, before and after 12 weeks training. The Data was collected and analyzed statistically by analysis of covariance to find out the significant level. The result of the study showed that there was significant effect of yogic practices, aerobic training and combined training on forced expiratory when compared to control group. The study concluded that all the three experimental groups have improved when compared to the control group. But the combined training group was superior to the other two experimental groups on forced expiratory volume. Hence, the study reveals the regular practicing of yogic practices, aerobic training, and combined training improve the forced expiratory volume.

Keywords: yogic practices, aerobic training and forced expiratory volume.

INTRODUCTION:

Yoga is a systematic practice for the realization of higher perceptions. It is the science of life and an ideal way of living, providing rhythm to the body, melody to the mind, harmony to the soul and thereby symphony to life. In short, Yoga is a way to achieve total health, peace, bliss and wisdom. Physical, mental and spiritual aspects of yoga help to make one's life purposeful, useful and noble. Thus Yoga is an art, science and philosophy, which influence the life of man at each level. Therefore, the effect of yoga must be felt in every movement of our day to day lives.¹

AEROBIC EXERCISE:

The American College of sports medicine defines aerobic exercise as “any activity that uses large muscle group, can be maintained continuously, and is rhythmic in nature.” It is a type of exercise that overloads the heart and lungs and causes them to work harder than at rest. The important idea behind aerobic exercise today, is to get up and get moving. There are more activities than ever to choose from, whether it is a new activity or an old one. Find something to enjoy doing the aerobics keeps the heart rate elevated for a continuous time period and get moving to a healthier life. It uses large muscle group rhythmically and continuously and elevates the heart rate and breathing for a sustained period common examples includes walking, jogging or running, swimming, rowing stair climbing, bicycling, cross country skin, step and dance exercise, roller skating and the more continuous from of tennis, racquetball and squash.²

STATEMENT OF THE PROBLEM:

The purpose of this study was to find out the effect of twelve weeks of yogic practices, aerobic training and combined training on forced expiratory volume of adolescent boys.

METHODOLOGY:

The purpose of the study was to find out the effect of yogic practices, aerobic training and combined training (yogic practices and aerobic training) on forced expiratory volume of adolescent boys. To achieve the purpose of this study, sixty adolescent boys were selected randomly from New Modern Vidhya Mandhir Higher Secondary School, Puducherry. The subjects age ranged between 14 to 17 years. They were divided into four groups fifteen in each and the group. The groups were named as Group A, Group B, Group C and Group D. Group A underwent yogic practices, Group B underwent aerobic training, Group C underwent combined training (combination of yogic practices and aerobic exercise) five days per week for 12 weeks and Group D acted as a control Group who did not involve in any special training apart from the regular activities. The training was conducted in the evening session between 4 p.m. to 5 p.m. for twelve weeks. The forced expiratory volume was selected as variable of this study. The forced expiratory volume was assessed by spirolab version three, before and after 12 weeks training program. The data was collected and analyzed statistically by analysis of covariance to find out the significant level.

ANALYSIS OF COVARIANCE FOR PRE TEST AND POST TEST DATA ON FORCED EXPIRATORY VOLUME OF CONTROL GROUP AND EXPERIMENTAL GROUPS

Mean	Yogic Group	Aerobic Group	Combined Group	Control Group	Source of Variance	Sum of Squares	Degrees of freedom	Mean Square	'F' Ratio
Pre-test Mean	2.61	2.88	2.68	2.42	B	1.60	3	0.54	2.14
S.D.	0.57	0.59	0.42	3.81	W	14.01	56	0.25	
Post-test Mean	3.17	3.21	3.06	2.38	B	330.19	3	110.06	8.45*
S.D.	0.55	0.77	0.19	0.53	W	729.53	56	13.03	
Adjusted Post-test Mean	3.09	3.04	3.20	2.51	B	4.00	3	0.238	5.61*
					W	13.07	55		

* Significant at 0.05 level.

Required table value at 0.05 level of significance for 3 & 55 degrees of freedom = 2.77.

It is observed from above table that the pre test means on forced expiratory volume of the yogic practices, aerobic training, combined training and control groups are 2.61, 2.88, 2.68 and 2.42 respectively. The obtained 'F' ratio value 2.14 for the pre test mean is lesser than the required value 2.77 for 3 & 56 degrees of freedom at 0.05 level of significant. This reveals that there is no statistically significant difference between the control and the experimental groups on forced expiratory volume before the commencement of the experimental training. It is inferred that the selection of the subjects for the three groups are successful.

The post test means on forced expiratory volume of the yogic practices, aerobic training, combined training and control groups are 3.17, 3.21, 3.06 and 2.38 respectively. The obtained 'F' ratio value 8.45 for the post test mean is greater than the required value 2.77 for 3 & 56 degrees of freedom at 0.05 level of significant. This reveals that there is significant difference between the control and the experimental groups on forced expiratory volume. So the post test mean value shows significant difference among the experimental groups and control group.

The post adjusted test means on forced expiratory volume of the yogic practices, aerobic training, combined training and control group are 3.09, 3.04, 3.20 and 2.51 respectively. The obtained 'F' ratio value 5.61 for the adjusted post test mean is greater than the required value 2.77 for 3 & 56 degrees of freedom at 0.05 level of significant. This reveals that there is significant difference between the control and the experimental groups on forced expiratory volume. So the adjusted post test mean value shows significant difference among the experimental groups and control group.

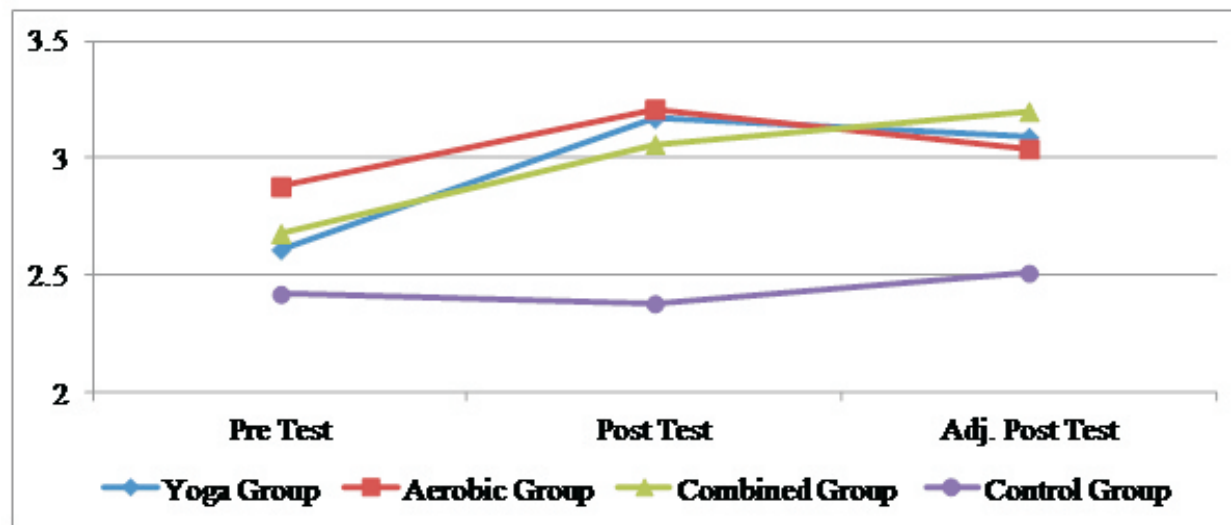
SCHIFFE'S POST HOC TEST FOR THE SIGNIFICANT DIFFERENCE BETWEEN PAIRED ADJUSTED POST TEST MEAN ON FORCED EXPIRATORY VOLUME

Yoga	Aerobic	Combined	Control	Mean differences	Required C.I.
3.09	3.04	-	-	0.05	0.51
3.09	-	3.20	-	0.11	
3.09	-	-	2.51	0.58*	
-	3.04	3.20	-	0.16	
-	3.04	-	2.51	0.53*	
-	-	3.20	2.51	0.69*	

*The required 0.05 level of confidence interval is 0.51

The Scheffe's table reveals that there is no significant difference between the yogic and aerobic group, yogic and combined group, aerobic and combined group as the mean differences 0.05, 0.11 and 0.16 are lesser than the CI value 0.51 at 0.05 level of confidence. There is significant difference between the yogic practice and control group, aerobic and control group, combined and control groups as the mean differences 0.58, 0.53 and 0.69 are greater than the CI value at 0.05 level of confidence. The result reveals that there is significant effect between the paired means difference of yogic practice group, aerobic group, and combined group with control group on forced expiratory volume. There is no significant difference between the experimental groups, but the mean value indicates combined group is better than the yogic and aerobic groups.

THE LINEAR GRAPH SHOWS PRE, POST AND ADJUSTED POST MEANS OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON FORCED EXPIRATORY VOLUME



DISCUSSIONS ON FINDINGS:

From the result of this study it is revealed that yogic practice, aerobic training and combined training has enhanced forced expiratory volume. The following study on Yogic practice on forced expiratory volume of Kaushik Halder et al. (2012) and Tran et.al, (2001) has supported the present study. These findings were also in agreement with the findings of Raj Kumar Yadav and Shobha Das (2001), Shenbagavalli and Mary Reethammal (2008) experimented and suggested that aerobic training developed forced expiratory volume.

CONCLUSION:

The study was concluded that there may be significant effect of yogic practice, aerobic training and combined training has enhanced forced expiratory volume of adolescent boys after twelve weeks training period. The result of the study showed that there was significant effect of yogic practices, aerobic training and combined training on forced expiratory volume of adolescent boys after 12 weeks. The combined group is superior to the yogic and aerobic group. Hence, the study recommends that yogic practices, aerobic training and combined training enhances the forced expiratory volume.

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