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Uday Prakash

Ph.D. Research Scholar,
Department of Yoga, Annamalai
University, Tamil Nadu, India

Dr. P Sivaraman

Assistant Professor,
Department of Physical
Education, Annamalai
University, Tamil Nadu, India

Dr. Indu NI

Yoga Teacher, VPSV Ayurveda
College, Kailas Manjeri, Kerala,
India

Combined and isolated effect of asanas and pranayama practices on expiratory reserve volume among obese men

Uday Prakash, Dr. P Sivaraman and Dr. Indu NI

Abstract

This study was to find out the combined and isolated effect of asanas and pranayama practices on expiratory reserve volume among obese men. To achieve this purpose of the study sixty obese men selected from in and around Malappuram, Kerala and their ages ranged between 17-25 years will be selected as subjects. The selected subjects will be divided into four equal groups, in which, Group I (N 15) will undergo asana practices, Group II (N 15) will undergo pranayama practices, Group III (N 15) will undergo asana and pranayama practices and Group IV (N 15) will act as control which does not participate in any special training. The training programme will be carried out for this study is three days per week for twelve weeks. The subjects were tested on expiratory reserve volume before and after the training period. Before the training period, expiratory reserve volumes were measured by using a wet spirometer. Analysis of Covariance (ANCOVA) was applied as a statistical tool for the present study. The Scheffé S test was used as a posthoc test at whatever point the 'F' – the ratio of the adjusted post-test means was discovered to be significant at 0.05 level of significance. Both asana, pranayama and asanas with pranayama practices group influence expiratory reserve volume when compared with the control group. Asana with pranayama practices may have a better influence on the expiratory reserve volume of obese men.

Keywords: Asana practices, pranayama practices, asana with pranayama practices, expiratory reserve volume and obesity

Introduction

Asanas can run into several hundred in number, though about one hundred are perhaps better known today. There are two types of asanas: The therapeutic preventive and the meditative. Pranayama exercises have an energizing effect, the vitalizing techniques have a heating effect, tranquillizing techniques have a cooling effect and balancing techniques have a balancing effect on prana flow and the physical body. All such techniques essentially refine, harmonized decongest, charge the frequency of pranic flow and promote proper distribution to parts of the body via the vast network of nadis.

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. People are considered as obese when their body mass (BMI), a measurement obtained by dividing a person's weight in kilograms by the square of the person's height in meters, exceeds 30 kg/m².

The respiratory rate indicates lung capacity. The lesser respiratory rate gives good performance for all the games and sports. Regular participation in aerobic activity such as jogging, cycling and distance swimming reduce the respiratory rate.

Statement of the problem

The present study stated based on the systematic background and expert opinion that, the purpose of the study was to find out the combined and isolated effect of asanas and pranayama practices on expiratory reserve volume among obese men.

Methodology

To achieve this purpose of the study sixty obese men selected from in and around Malappuram, Kerala and their ages ranged between 17-25 years will be selected as subjects.

Corresponding Author:

Uday Prakash

Ph.D. Research Scholar,
Department of Yoga, Annamalai
University, Tamil Nadu, India

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reserve volume and expiratory reserve volume were measured by using a wet spirometer.

Analysis of data

The data collected before and after the experimental periods on expiratory reserve volume on asana practices, pranayama practices, asana with pranayama practices and control group were analysed and presented in the following table-I.

Table I: Analysis of covariance on expiratory reserve volume of combined and isolated asanas and pranayama practices group and control group

	Combined Group	Asana Practice Group	Pranayama Practice Group	Control Group	SOV	SS	DF	MS	'F'
Pre-test\	1.1200	1.1202	1.1105	1.1100	B	0.001	3	0.022	0.609
Mean S.D	0.024	0.023	0.025	0.025	W	0.017	56	0.008	
Post-test	1.2144	1.1638	1.1793	1.106	B	0.084	3	0.028	29.993*
Mean S.D	0.024	0.015	0.022	0.018	W	0.020	56	0.002	
Adj.	1.213	1.162	1.181	1.112	B	0.078	3	0.026	78.824*
Post-test Mean					W	0.018	55	0.004	

* Significant at 0.05 level of significance.

The table value required for significance at 0.05 level of significance with DF 3 and 56 and 3 and 55 were 2.78 and 2.77 respectively.

The obtained 'F' value on the pre-test scores of 0.609 is less than the required 'F' value of 2.78 to be significant at 0.05 level. This proves that there is no significant difference among the groups at the initial stage and the randomized assignment of the subjects into four groups is successful.

The post-test scores analysis proves that there is a significant difference among the groups, as the obtained 'F' value of 29.993 is greater than the required 'F' value of 2.78. This proves that there is a significant difference among the post-

test means of the subjects.

Taking into consideration of pre and post-test scores among the groups, adjusted mean scores are calculated and subjected to statistical treatment. The obtained 'F' value of 78.824 is greater than the required table 'F' value of 2.77. This proves that there are significant differences existed among the adjusted means due to twelve weeks of combined and isolated asanas and pranayama practices on expiratory reserve volume. Since the significant improvements are recorded, the results are subjected to post hoc analysis using Scheffe's Confidence interval test. The results are presented in Table II.

Table II: Scheffé s test for the difference between the adjusted post-test mean of expiratory reserve volume

Adjusted Post-test Mean on Expiratory reserve volume					
Combined Group	Asana Practice Group	Pranayama Practice Group	Control Group	Mean Difference	Confidence interval at 0.05 level
1.213	1.152			0.051*	0.039
1.213		1.181		0.032	
1.213			1.112	0.099*	
	1.152	1.181		0.029	
	1.152		1.112	0.040*	
		1.181	1.112	0.069*	

*Significant at 0.05 level of significance

Table II shows that the adjusted post-test means the difference in expiratory reserve volume between the combined exercises group and asana practices group is 0.051, the combined exercises group and control group is 0.099, asana practices group and control group is 0.040, the pranayama practices group and control group is 0.069 which were higher at 0.05 level of significance. But the adjusted post-test mean difference in expiratory reserve volume between the combined exercises and pranayama practices group was 0.032 and asana practices group and pranayama practices group is

0.029 which was insignificant at a 0.05 level of significance. It could be completed from the after-effect of the test that the combined and isolated asanas and pranayama practices groups have significant improvement in expiratory reserve volume after their training programs.

The adjusted post-test mean values on expiratory reserve volume of combined and isolated asanas and pranayama practices and control groups are graphically represented in Figure II.

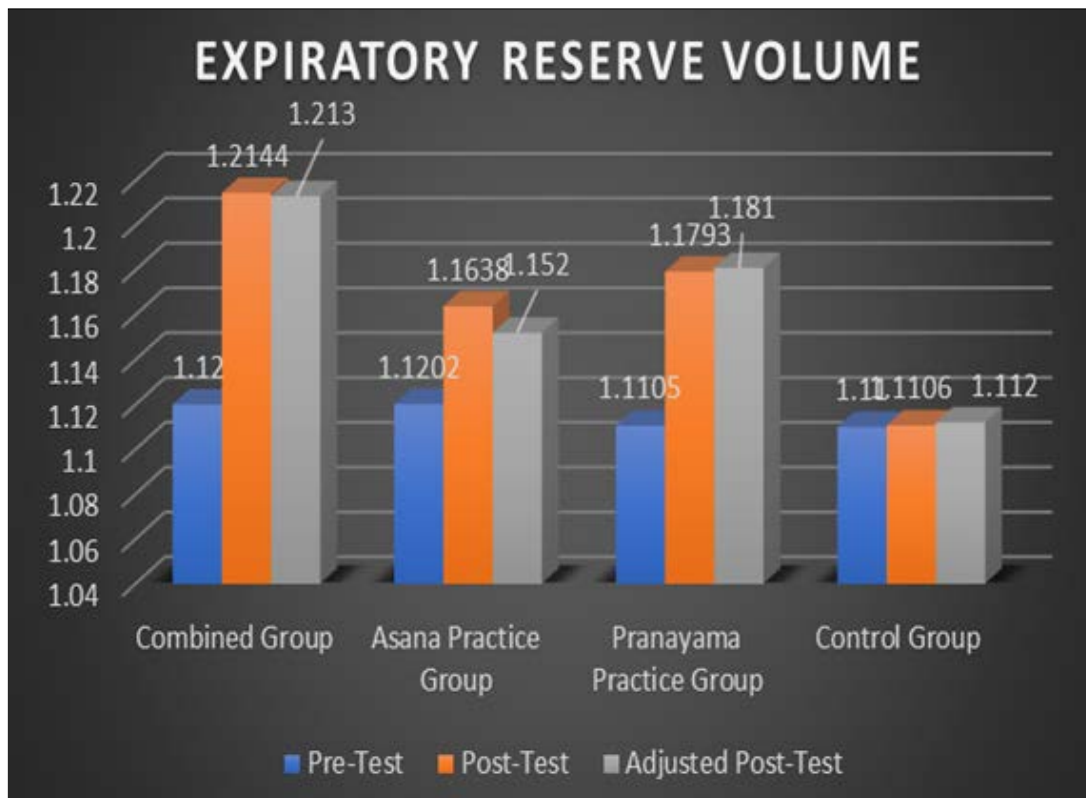


Fig 1: Pre, Post and Adjusted post-test mean values on expiratory reserve volume of combined and isolated asanas and pranayama practices and control groups

Conclusion

From the analysis of the data, the following conclusion was drawn.

The research study also shows that combined and isolated asana and pranayama practices have improved expiratory reserve volume when compared with the control group. In addition, the results of the tests show that there was no significant difference between the combined exercise group and pranayama practices groups and asana practices group and pranayama practices groups on expiratory reserve volume.

Recommendations

The following recommendations were drawn, from the results of the present study

1. Further studies may be made to investigate the effect of asana and pranayama practices on anthropometric measures, and biochemical variables.
2. The effect of combined and isolated asana and pranayama practices programmes can be assessed on physiological and psychological factors.
3. In the current study, the subjects chosen were obese male students and in future studies, the subjects may be chosen obese female students and middle-aged obese men and women. etc.

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