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

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Abstract

This study was to find out the combined and isolated effect of asanas and pranayama practices on inspiratory reserve volume among obese men. To achieve this purpose of the study sixty obese men selected from in and around Malappuram, Kerala and their age 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 selected variables, such as, inspiratory reserve volume before and after the training period. Prior after the training period, inspiratory reserve volume was measured by using wet spirometer. Analysis of Covariance (ANCOVA) was applied as statistical tool for the present study. The Scheffé S test was used as post-hoc test at whatever point the 'F' - 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 on inspiratory reserve volume when compared with control group. Asana with pranayama practices may have better influence on inspiratory reserve volume of obese men.

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

Introduction

Overweight and obesity kills more people than underweight and act as a predisposing factor for non-communicable diseases such as cardiovascular diseases (heart attack and stroke), diabetes, musculoskeletal disorders (osteoarthritis), some cancers (including breast, ovarian, prostate, liver, gallbladder, kidney, and colon).

Obesity during childhood also causes breathing difficulties, increased risk of fractures, hypertension, and psychological effects. In later life with high chances of obesity, cardiovascular diseases, diabetes can lead to disability and premature death. Overweight, obesity and their related non-communicable disease are preventable. By making the choice of healthier food and regular physical activity overweight and obesity can be prevented.

Yoga is essentially a spiritual discipline based on an extremely subtle science, which focuses on bringing harmony between mind and body. It is an art and science of healthy living. The word 'Yoga' is derived from the Sanskrit root 'Yuj', meaning 'to join' or 'to yoke' or 'to unite'. As per Yogic scriptures, the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a perfect harmony between the mind and body, Man & Nature.

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 Inspiratory reserve volume among obese men.

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Methodology

To achieve this purpose of the study sixty obese men selected from in and around Malappuram, Kerala and their age 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 inspiratory reserve volume before and after the training period. Prior after the training period, inspiratory reserve volume and expiratory reserve volume were measured by using wet spirometer.

Analysis of data

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

Table 1: Analysis of covariance on inspiratory 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 mean	2.4787	2.4687	2.4640	2.4567	B	0.004	3	0.001	0.534
S.D	0.046	0.047	0.056	0.042	W	0.389	56	0.009	
Post-test mean	2.6593	2.5487	2.6101	2.4827	B	0.263	3	0.088	43.984*
S.D	0.029	0.043	0.050	0.050	W	0.112	56	0.002	
Adj. Post-test mean	2.652	2.548	2.615	2.489	B	0.228	3	0.076	65.106*
					W	0.064	55	0.001	

* 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 pre-test scores 0.534 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 initial stage and the randomized assignment of the subjects into four groups are successful.

The post test scores analysis proves that there is significant difference among the groups, as the obtained 'F' value 43.984 is greater than the required 'F' value of 2.78. This proves that there is 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 65.106 is greater than the required table 'F' value of 2.77. This proves that there is significant differences existed among the adjusted means due to twelve weeks of combined and isolated asanas and pranayama practices on inspiratory 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 2: Scheffé's test for the difference between the adjusted post-test mean of inspiratory reserve volume

Adjusted Post-test Mean on Inspiratory reserve volume					
Combined Group	Asana Practice Group	Pranayama Practice Group	Control Group	Mean Difference	Confidence interval at .05 level
2.652	2.548			0.104*	0.058
2.652		2.615		0.037	
2.652			2.489	0.163*	
	2.548	2.615		0.067*	
	2.548		2.489	0.059*	
		2.615	2.489	0.126*	

*Significant at 0.05 level of significance

Table - II shows that the adjusted post-test means difference in inspiratory reserve volume between combined exercises group and asana practices group is 0.104, combined exercises group and control group is 0.163, asana practices group and pranayama practices group is 0.067, asana practices group and control group is 0.059, pranayama practices group and control group is 0.126 which were higher at 0.05 level of significance. But the adjusted post-test mean difference in inspiratory reserve volume between combined exercises and pranayama practices group was 0.037, which was

insignificant at .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 inspiratory reserve volume after their training programs.

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

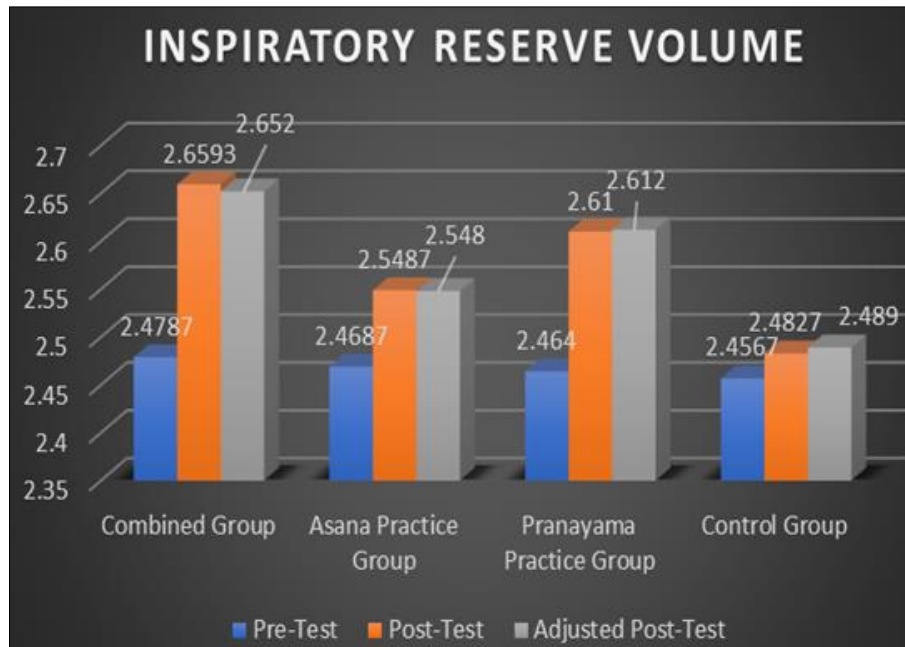


Fig 1: Pre, Post and Adjusted post-test mean values on inspiratory reserve volume of combined and isolated asanas and pranayama practices and control groups

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 inspiratory reserve volume when compared with the control group. In addition, the results of the tests show that there was no significant difference between combined exercise group and pranayama practices groups on inspiratory 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, bio-chemical 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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