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# Combined and isolated effect of asanas and pranayama practices on vital capacity 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 vital capacity among obese men. To achieve this purpose of the study sixty obese men selected from in and around Perambalur, Tamil Nadu, India 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 do 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, vital capacity before and after the training period. Prior after the training period vital capacity were 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 were discovered to be significant at 0.05 level of significance. Both asana, pranayama and asanas with pranayama practices group influence on vital capacity when compared with control group. Asana with pranayama practices may have better influence on vital capacity of obese men.

**Keywords:** Asana practices, pranayama practices, asana with pranayama practices, vital capacity and obesity.

## Introduction
More people die from obesity and overweight than from underweight, and these conditions also increase the risk of developing non-communicable diseases like osteoarthritis, breast, ovarian, prostate, liver, gallbladder, kidney, and colon cancers as well as cardiovascular diseases (heart attack and stroke).Additionally, childhood obesity increases the incidence of fractures, increases blood pressure, and has psychological repercussions. Obesity, cardiovascular disease, and diabetes have a significant risk of developing in later age and can cause disability and early death. Obesity, being overweight, and the non-communicable diseases it causes may all be avoided. Overweight and obesity may be avoided by choosing healthier foods and participating in regular physical activity.
Yoga is primarily a spiritual practise that focuses on achieving harmony between the body and mind. It is based on a very subtle science. It is a science and an art of living healthily. The Sanskrit term "Yoga" is derived from the root "Yuj," which means "to join," "to yoke," or "to unite." According to yogic texts, practising yoga causes one's awareness to become one with the Universal awareness, signifying complete harmony between the mind and body, as well as between man and 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 vital capacity among obese men.

## Methodology
To achieve this purpose of the study sixty obese men selected from in and around Perambalur, Tamil Nadu, India 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 do 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 vital capacity before and after the training period. Prior after the training period vital capacity and expiratory reserve volume were measured by using wet spirometer.

**Analysis of data**

The data collected prior to and after the experimental periods on vital capacity on asana practices, pranayama practices, asana with pranayama practices and control group were analysed and presented in the following table -1.

**Table 1:** Analysis of covariance on vital capacity 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 0.303 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 26.389 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 76.777 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 vital capacity. 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 - 2.

**Table 2:** Scheffĕ s test for the difference between the adjusted post-test mean of vital capacity

| Adjusted Post-test Mean on Vital capacity | | | | | |
|---|---|---|---|---|---|
| **Combined Group** | **Asana Practice Group** | **Pranayama Practice Group** | **Control Group** | **Mean Difference** | **Confidence interval at 0.05 level** |
| 4.276 | 4.227 | | | 0.049* | 0.016 |
| 4.276 | | 4.251 | | 0.025* | |
| 4.276 | | | 4.210 | 0.066* | |
| | 4.227 | 4.251 | | 0.024* | |
| | 4.227 | | 4.210 | 0.017* | |
| | | 4.251 | 4.210 | 0.041* | |

*Significant at 0.05 level of significance

Table – 2 shows that the adjusted post-test means difference in vital capacity between combined exercises group and asana practices group is 0.049, combined exercise group and pranayama practices group is 0.025, combined exercises group and control group is 0.066, asana practices group and pranayama practices group is 0.024, asana practices group and control group is 0.017, pranayama practices group and control group is 0.041 which were higher at 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 vital capacity after their training programs.

The adjusted post-test mean values on vital capacity of combined and isolated asanas and pranayama practices and control groups are graphically represented in figure - 1.

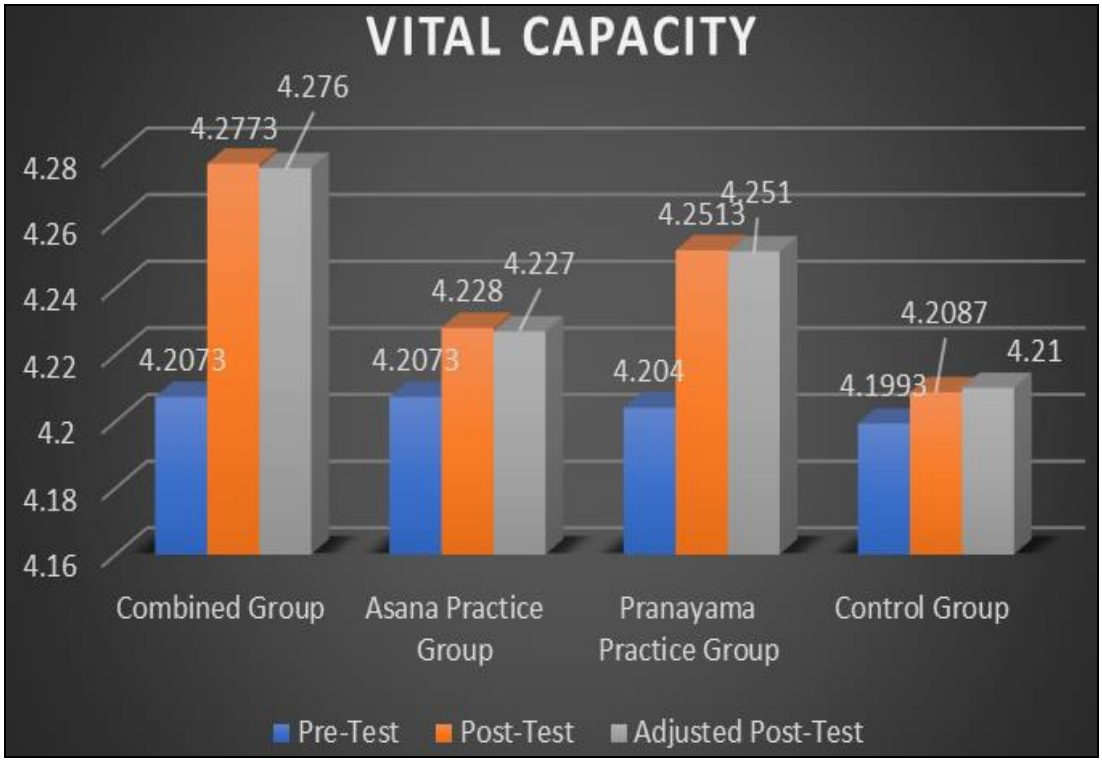


**Fig 1:** Pre, Post and Adjusted post-test mean values on vital capacity of combined and isolated asanas and pranayama practices and control groups

## Conclusion

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

The research study also shows that combined and isolated asana and pranayama practices have improved vital capacity when compared with the control group. In addition, the results of the tests shows that there was a significant difference between combined exercise group and pranayama practices groups on vital capacity.

## 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 factors.
3. In the current study, the subjects chosen was 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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