

Research Paper :

Effect of yogic exercises on vital capacity of senior citizens of Muzaffarnagar

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Received : July, 2010; Accepted : November, 2010

ABSTRACT

The purpose of the study was to investigate the effect of Yogic exercises on the vital capacity of senior citizens of Muzaffarnagar (U.P.). For conducting the study, fifteen senior citizens males (age range 60 -70) of Muzaffarnagar were selected. The selected subject went through Yogic training weekly 5 days *i.e.* Monday to Friday between 6.00am to 8.00am (for 30 minutes) for 8 weeks under the proper supervision and guidance of the investigator. The Yogic exercises namely, Bhastrika Pranayam, Anulom/vilum, Bhramri, Sitlee, Sitkari, Ujjai, Vedhene bandh were used. Before applying the experiment, all the subjects attended the pre test, which was conducted a day prior to the commencement of the training and the data were collected on vital capacity. After 8 weeks of training, the post test was conducted one day after the training period to find out any change in the criterion variable. Special equipment namely 'dry spirometer' was used for collection of the data on vital capacity. The collected data were statistically analyzed by using t-test, standard deviation and mean. The finding of the study showed that there was a significant effect of Yogic exercises on vital capacity of senior citizens of Muzaffarnagar at .05 level of significance.

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Singh, Shyam Narayan (2011). Effect of yogic exercises on vital capacity of senior citizens of Muzaffarnagar. *Internat. J. Phy. Edu.*, 4(1): 25-26.

Key words : Vital Capacity, Yogic exercises, Senior citizens

The modern lifestyle often obstructs the natural equilibrium of humans and nature. The environment is becoming more and more polluted and resources are becoming scarce because of human over-consumption and activity. Changing moral values in modern individuals leads to diseases like diabetes, constipation, migraine headache, slip disc, anxiety, neurosis and stress related disorders. Now day Yoga is a valuable tool for people of all ages to improve their quality of life. It includes many health and wellness programmes. The physiological benefits of participating in Yoga activity such as decreased depression and anxiety or improve mood are more likely to be experienced when the physical activity such as Yoga is enjoyable and there is a feeling of flow. The intention of Yoga is to maximize one's potential through the realization of one's inner goodness and inner goodness of others as well. Yoga is said to be enjoyable physical activity which invites all the people of different age groups to become stronger, more mindful and more initiative enhances our emotional spiritual and mental health. After the age of 60, for senior citizen, it is not possible to do the rigorous exercises. Even our eating habits and quality of food leads to the problem of heart and diabetes in the old

age. So, in this age Yoga is considered to be the only way where the continued movement is allowed for a sufficient heart rate training effect of low to moderate intensity. Keeping all the views in the mind regarding importance of Yoga, the present study was carried out to determine the effect of Yoga exercises on the vital capacity of senior citizens of Muzaffarnagar.

METHODOLOGY

In this study, the purposive sampling was used for selection of the subjects. For conducting the study fifteen male subjects in the age group of 60 – 70 years were selected from Gandhi colony and Adarsh colony area of Muzaffarnagar district, Uttar Pradesh. All the subjects voluntarily agreed to extend full cooperation and efforts for the successful completion of the investigation. The selected subjects went through Yogic training weekly 5 days *i.e.* Monday to Friday between 6.00am to 8.00am (for 30 minutes) for 8 weeks under the proper supervision and guidance of the investigator. The Yogic exercises namely, Bhastrika Pranayam, Anuloma/Vilum, Bhramri, Sitlee, Sitkari, Ujjai, Vedhene bandh were used. Before applying the experiment, all the subjects attended the pre

test, which was conducted a day prior to the commencement of the training and the data were collected on vital capacity. After 8 weeks of training, the post test was conducted one day after the training period to find out any change in the criterion variable. Special equipment namely, 'dry spirometer' was used for collection of the data on vital capacity.

Keeping in view the objective of the study on the effect of Yogic exercises on vital capacity of senior citizens of Muzaffarnagar the appropriate statistical techniques *i.e.* t-test, standard deviation and mean were used to analyze the data.

OBSERVATIONS AND DISCUSSION

The statistical analysis for the study on the basis of collected data prior to and after the Yogic exercises programme on vital capacity was done by using t-test. The statistical analysis was tested for significance at .05 level. Analysis of data pertaining to this has been presented in Table 1.

It is evident from Table 1 that the mean score of pre and post test were 3.72 and 3.82 and standard deviation for pre and post test were .072 and .075, respectively. The t-ratio was found significant, as the calculated t-value is 3.59 which is greater than the tabulated t-value, 2.145.

Table 1: Mean, standard deviation and t-test of pre and post- test regarding vital capacity

Vital capacity	N	Mean	S.D.	t – ratio	Level of significance
Pre-test	15	3.72	.072	3.59	.05
Post-test	15	3.82	.075		

$t_{.05} (N - 1) = t_{.05} (14) = 2.145$

The finding of the study showed that there was a significant effect of Yogic exercises on vital capacity of senior citizens of Muzaffarnagar at .05 level of significance. This was because of improving the functional capacity of lungs, most of the experiments showed that Yoga would cause the lung capacity to increase. Kocher(1974) concluded in the study that the improvement of vital capacity was due to the fact that Yogic exercises training might have increased the chest expansion capacity, it is because the Yogic practices increase the elasticity of thoracic cage and strength of respiratory muscle and provide stretching the lungs muscles and alveoli in greater degree which in turn might have increased the size and capacity of lungs and improve the efficiency of inter costals muscles. The present study

supported by Bhole and Karambelkar(1972) measured vital capacity, breath holding time in two groups and trained them for three weeks, found significant change only in vital capacity, whereas Robson(1972), studied the effects of Yoga in flexibility, vital capacity and breath holding time, found significant results in all the variables. As per Naik (2009), the rib cage is a structure made up of various joints of dorsal vertebrae, ribs and sternum. Various Asanas act on all these joints and keep all of them free and mobile. Freedom in these joints allows free and maximum respiratory movements. Expansion of rib cage expands the lungs inside. Sector by sector all regions of lungs are expanded by expanding the rib cage. This is pulmonary exercise. Various postures supine, side ways, inversion prone etc. allow blood in pulmonary arteries to circulate all over the lung, so that ideal mixing of oxygen in blood occurs.

Hence, it suggests that 30 minutes of Bhastrika Pranayam, Anuloma/Vilumna, Bharmri, Sitlee, Sitkari, Ujjai, Vedhene bandh were adequate for increasing the significant change in vital capacity.

Conclusion:

Based on the present study it is concluded that the Yoga exercises have positive effect on vital capacity of senior citizens of Muzaffarnagar. Thus, if followed correctly and scientifically examined, Yoga can be a promising intervention in improving the pathology of definite conditions among senior citizens who are more prone to complications arising due to vital capacity related disorders.

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