

Effect of Varied Pranayama Practices on Vital Capacity among University Female Students

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Abstract

The purpose of the study was to find out the effect of pranayama practices on vital capacity. To achieve this purpose of the study, thirty female students studying master degree in physical education and sports, Tamilnadu Physical Education and Sports University, Chennai were selected as subjects at random. The age of the subjects were ranged from 21 to 24 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as varied pranayama practices group and control group. The varied pranayama practices (Group I) underwent pranayama practices programme for five days per week for six weeks. Group II acted as control group in which they did not undergo any special practice programme apart from their regular physical education programme. All the subjects of two groups were tested on vital capacity at prior to and immediately after the practice programme. The analysis of covariance (ANCOVA) was used to analysis the significant difference, if any in between the groups. The level of significant to test the 'F' ratio obtained by the analyses of covariance was tested at 0.05 level of confidence, which was considered as an appropriate. The results of the study revealed that there was a significant difference between varied pranayama practices group and control group on vital capacity among university female students.

Keywords: Pranayama, Vital Capacity, Yoga

Introduction

Yogic practices are Indian method of exercise, which are practiced over thousands of years for keeping the human body physical and mentally fit. Yoga is a very ancient discipline. It is important for spiritual attainment has been recognized throughout the ages by all the system of Indian philosophy, however, its application in various fields is new trend.

Now a days the college females are having so much of problem like more stress, less concentration, no patience, lack of memory, with out discipline and lack of consciousness because of the environment, bad food habits, wrong guidance, etc. So the yogic practices is the one of the main solution of what I mentioned above.

In College female students after the pranayama practices the Physiological level is to increase the amount of Prana (life force) to the oxygen, oxygen to the blood, and blood and nourishment to our entire anatomical, physiological and energetic systems and also improve all metabolic processes as they stimulate energy, oxygen and blood flow to the extremities or peripheral systems, which represent a concern as important as the central systems; in this way facilitating detoxification and renewal of the organic body.

Energetic level, also promote energy flow and comprehensive opening, flushing and cleansing of the energy channels and energy centers located throughout the body (meridians and acupressure points, chakras and marmas) from polluting substances. Mental / Emotional level, also propose a conscious connection of the attention to the breath, inviting a state of dynamic meditation, as we calm and stabilize our thoughts and emotions, as we develop focus, and as we learn to hold one-pointed attention.

Spiritual level, also promote the expansion of our consciousness as we tune all rhythms of the body into the rhythm of our breath, and the rhythm of our breath to the rhythm of a greater Divine will. As we do this we start transcending our Karma and evolving spiritually. We could go on and on explaining the underlying processes behind what we do, but more important than this is to actually develop a steady practice as the root of all these and other beneficial possibilities, (Yoga for Adults, 2011)

This Sanskrit word pranayama comes from the roots prana (Universal energy), and yama (to control). The literal definition then, is the “control of (or holding onto) the vital force (prana)”, most aptly via the breath, which makes pranayama yoga, in effect, the practice of ‘breath control’.

It is a conscious attempt to stabilize the flows of prana and apana (two primary subtle energies whose dynamic movements are intimately linked to the breath), and bring them into a state of ‘polarity’ or ‘harmonious interaction’.

This branch of yoga is most often regarded as ‘the control of the breath’. It is true that on the existential level, the easiest ‘perceivable’ manifestation of prana, and therefore that upon which it is easiest to act, is deemed to be the breath. Consequently, the yogi mostly relies on his/her breath for the absorption, assimilation and manipulation of this vital energy.

Moreover, prana manifests within beings as the different physical, mental and psychic processes. The fine movements of the nerves in a living body and the powers of the mind are in fact only more specific manifestations of prana. The activity of the five senses are also expressions of prana vibrating at certain frequencies.

Since prana is the vital force and yama refers to its control, we can say really that pranayama refers to the ‘discipline integrated as a fundamental stage in the yogic practice, which studies the origin and nature of the mysterious and invisible force that is prana’.

It is the power of mental concentration, or the mind that enables one to affect, at will, the pranic flow. So it is in pranayama techniques, as with all other yoga techniques, that the mind is the ultimate power behind the practice.

In fact, it can be said that concentration of the mind is even more important in pranayama than it is with the asana. Without the appropriate use of the mind (or rather, the concentration) the techniques amount to mere physicality’s.

One of the most important truths that we’ll continue to realize in our exploration of yoga is that ‘where the mind goes, so will prana’. Mind can direct, activate, block or use prana, both for productive as well as destructive ends.

Vital capacity is a function of the size of your lungs, which is correlated with the size of your body, particularly your height. It’s also a function of your age. As you grow older, your lungs lose elasticity and your chest becomes stiffer. This leaves more air trapped in the lungs, increasing the residual volume, which leads to a gradual decline in vital capacity

The Vital capacity may be reduced by a decrease in the amount of functioning lung tissue resulting from edema, fibrosis, pneumonia, pulmonary resection, or tumors; by limited chest expansion resulting from chest deformity, neuromuscular disease, pneumothorax, or pregnancy; or by airway obstruction.

Statement of the Problem

The purpose of the study was to investigate the effect of varied pranayama practices on vital capacity among university female students.

Objective of the Study

The objective of the study was to find out the effect varied pranayama practices on vital capacity among university female students.

It was hypothesized that the effect of varied pranayama practices on vital capacity among university female students during pre and post tests would differ significantly.

Review of Related literature

Roland KP, Jakobi JM and Jones GR (2011) determined Interest in yoga is growing, especially among older adults. This review critically summarizes the current literature to investigate whether physical fitness and function benefits are engendered through the practice of yoga in older adults. A comprehensive search yielded 507 studies; 10 studies with 544 participants (69.6 ± 6.3 yr, 71% female) were included. Large variability in yoga styles and measurement outcomes make it challenging to interpret results across studies. Studies reported moderate improvements for gait (ES = 0.54, 0.80), balance (ES = 0.25-1.61), upper/lower body flexibility (ES = 0.25, 0.70), lower body strength (ES = 0.51), and weight loss (ES = 0.73, 0.99). Yoga may engender improvements in some components of fitness in older adults. However, more evidence is needed to determine its effectiveness as an alternative exercise to promote fitness in older adults. Further investigation into yoga as an exercise activity for older adults is warranted.

Ray US et al (2001) studied effect of yogic practices during training period on the young trainees. 54 trainees of 20-25 years age group were divided randomly in two groups i.e. yoga and control group. Yoga group (23 males and 5 females) was administered yogic practices for the first five months of the course while control group (21 males and 5 females) did not perform yogic exercises during this period. From the 6th to 10th month of training both the groups performed the yogic practices. Physiological parameters like heart rate, blood pressure, oral temperature, skin temperature in resting condition, responses to maximal and submaximal exercise, body flexibility were recorded. Psychological parameters like personality, learning, arithmetic and psychomotor ability, mental well being were also recorded. Various parameters were taken before and during the 5th and 10th month of training period. Initially there was relatively higher sympathetic activity in both the groups due to the new work/training environment but gradually it subsided. Later on at the 5th and 10th month, yoga group had relatively lower sympathetic activity than the control group. There was improvement in performance at submaximal level of exercise and in anaerobic threshold in the yoga group. Shoulder, hip, trunk and neck flexibility improved in the yoga group. There was improvement in various psychological parameters like reduction in anxiety and depression and a better mental function after yogic practices.

Methodology

The purpose of the study was to find out the effect of varied pranayama practices on vital capacity. To achieve this purpose of the study, thirty female students studying master degree in physical education and sports, *Tamilnadu Physical Education and Sports University, Chennai* were selected as subjects at random. The age of the subjects were ranged from 21 to 24 years. The selected

subjects were divided into equal groups of fifteen subjects each. Such as varied pranayama practices group and control group. The varied pranayama practices group underwent pranayama practices programme for five days per week for six weeks. Group II acted as control in which did not undergo any special training programme apart from their regular physical education programme. All the subjects of two groups were tested on vital capacity at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analysis the significant difference, if any in between the groups. The level of significance to test the 'F' ratio obtained by the analysis of covariance was tested at 0.05 level of confidence, which was considered as an appropriate.

Experimental Design

The experimental group had undergone respective varied pranayama practices programme for five days per week for six weeks. The subjects of two groups were tested during pre and post- test.

Training Programme

1. Nadi Sodhana
2. Sitali Pranayama
3. Ujjayi Pranayama
4. Bhastrika Pranayama

Results and Statistical Analysis

The analysis of covariance on vital capacity of the pre and post test scores of varied pranayama practices and control groups have been analyzed and presented in table.

Table-I
Analysis of Covariance of the Data on Vital capacity of Pre and Post Test Scores of Varied Pranayama Practices and Control Groups

Test	Varied Pranayama Practices Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	'F' ratio
Pre Test							
Mean	3.77	3.75	Between	0.003	1	0.003	0.62
SD	0.06	0.08	Within	0.136	28	0.005	
PostTest							
Mean	3.92	3.74	Between	0.246	1	0.246	6.10*
SD	0.05	0.05	Within	0.123	28	0.004	
Adjusted Post Test							
Mean	3.92	3.75	Between	0.196	1	0.196	256.13*
			Within	0.021	27	0.001	

*Significant at 0.05 level of confidence

The table value required for significance at 0.05 level of confidence with 1 and 28, 1 and 27 were 4.20 and 4.215 respectively.