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Effect of Meditation on Vital Capacity on Youth

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Abstract:

The purpose of the study is to find whether there is any effect of meditation on vital capacity or not. To fulfil the specific purpose, the study was conducted on 200 male students of G.B. Pant College, Budaun which are randomly selected as subjects. The subjects were randomly divided in two groups named Treatment group (N=100) and Control group (N=100) respectively. Subjects under treatment group were introduced with the practice of meditation and the control groups were not given any kind of training. Pre and Post data of both groups were recorded after eight weeks of treatment to find the result. The collected data were analyzed by using t-test to find out any differences. The result showed significant improvement in the data of vital capacity of subjects under treatment group. Thus we can say that meditation can be used by athletes for improving performance.

Key Words: Meditation, Vital Capacity, Treatment Group, Randomly.

Introduction:

Youth is the time of life when one is young, but often means the time between childhood & adulthood. It is also defined as “the appearance, freshness, vigor, spirit, etc. characteristic of one who is youth. Definition of the specific age range that constitutes youth vary. An individual’s actual maturity may not correspond to their chronological age, as immature individual can exist at all ages. Man’s life is a continuous flow of activity. Every moment he is doing something and his every activity is the result of the joint efforts of the body and mind. More integrated efforts field more success to the individual. Things in this world outside ourselves come via the body (sense organs) into our mind and things in our mind reach the world outside through the body.

Yoga:

Yoga is one of the oldest forms of keeping oneself fit and healthy. Many literatures on Yoga prove that it the simplest way to increase flexibility, muscle strength better organ functioning to meet the variety for day today life. It tones the muscles of your body with less pain and strain. It is also the safer way for all age groups to keep themselves calm and relaxed. Life is a series of continuous physical and mental activities. The pace with which life is moving in twenty first century yoga seems to be the best remedy to overcome the stress of day today life. In order to lead a healthy and prosperous life with utmost harmony in society, Yoga can play an important role.



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Asanas effect in improved blood circulation and the massaging effect of surrounding muscles speeds up the sluggish digestion. As the person gets odder, the digestion gets slower and inefficient. Regular practice of Yoga thus results in an improved blood and nerve supply to the digestive and eliminative system which helps in better functioning of digestion. Yoga improves blood circulation, easing of muscle tension and the act of focusing the mind on the breath all combine to ease the nervous system. Long term benefits include reduced stress and anxiety level.

Yoga is an ancient Indian way of life, which includes changes in mental attitude, diet, and the practice of specific techniques such as Yoga Asanas, breathing practices (Pranayam) and meditation to attain the highest level of consciousness. It has been found that yogic practices leads to considerable health benefits, including cognition, respiration, reduced cardiovascular risk, body mass index, blood pressure and diabetes. Yoga also influenced immunity and ameliorated joint disorder.

Significance of the study:

The significance of the study would continue to promotion of youth in the competitive field in the following ways:

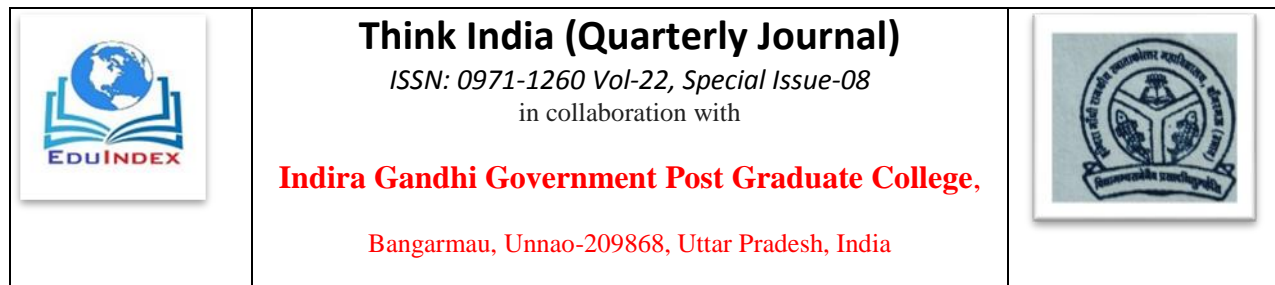
- 1) The study will provide authentic understanding of practicing Meditation for youth.
- 2) The study will be high lighting the effect of practicing Meditation on physiological variables.
- 3) The study will be significance with regard to provide a scientific explanation for the meditations and rejecting the concepts of meditations in ancient times as a difficult technique used only attainment of supernatural power.

Review Related to the Study:

Gove and Gharote conducted a study on “Immediate effect of one minute KapalBhati on respiratory function” where respiratory rate, minute ventilation and oxygen consumption were significantly increased, while tidal volume was significantly decreased during the practice of Kapalbhati for one minute in twelve police cadets. Immediately after Kapalbhati oxygen consumption was reduced and it was less than the resting value before Kapalbhati practice.

Bhole and Karambelkar studied the “Effect of Yoga training on vital capacity and breath holding time” measuring vital capacity in ml. and breath holding time in seconds respectively in 147 and 139 male, between the age group of 18-50 years, before and after 3 weeks training program in 20 Asanas, two breathing practices and 3 Kriyas at nine yoga camp held during the year 1959-69, at average increase of 15 seconds in breath holding time and 157 ml. in vital capacity were observed after training periods.

According to medical scientists, yoga therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body. Yoga acts both as a “Curative therapy”. The very essence of yoga lies in attaining mental peace, improved concentration powers, a relaxed state of living and harmony in relationship. Regular practice of asana, pranayama and meditation can help such diverse, ailments such as diabetes, blood pressure, digestive disorders, arthritis, arteriosclerosis, chronic fatigue, asthma, varicose veins and heart conditions. Laboratory tests have proved the yogi’s increased



abilities of consciously restrict living autonomic or involuntary functions, such as temperature, heartbeat and blood pressure. The study was undertaken with the aim to observe the effect of yoga (asana & pranayama) on selected physical & physiological variables of physical education B.P.ED (Bachelor of Physical Education) and M.P.ED (Master of Physical Education) students. For this study total 40 male students were selected as subject from SGGs Khalsa College Mahilpur, Punjab, India. Their age ranged between 18-24 years. Students were given the treatment of selected yogic asana & pranayama for 12 weeks Result shows that the regular practice of yoga improved physical variables (Muscular strength & endurance of trunk; and flexibility) & physiological variables (Pulse Rate, Vital Capacity & Peak Flow Rate) significantly.

Vinay and Bhavyesh studied if physical fitness can be improved by regular physical activity and transcendental meditation. A comparative study between them is elusive. Thirty young adults were divided into three groups of 10 each serving us restrictive, exercise and meditating subjects doing respective techniques for 12 weeks. A significant fall in heart rate was found in exercise as well as in the Transcendental Meditation groups in the present study. Reduction in systolic as well as diastolic blood pressure in normotensive and hypertension individuals doing meditation for more than one year has been reported. An increase in vital capacity and PEFr in both exercise and meditation group was also observed. Changes, though insignificant, in respiratory rate, blood pressure, maximum oxygen consumption, hemoglobin and cholesterol were also observed indicating the role of both the techniques in physical fitness.

Procedure

Selection of Subjects:

Two hundred students studying in different standards of G.B. Pant (P.G.) College were randomly selected as the subject of the study. The subjects were assigned at random to treatment and restrictive room each group consisting of hundred students.

Instruments Reliability:

The instruments in the study were obtained from standard firms, which cater to the needs of various research laboratories in India and their calibration are accepted as accurate enough for the purpose of the study. To test the instruments reliability few numbers of data were taken to ensure the accuracy of instrument.

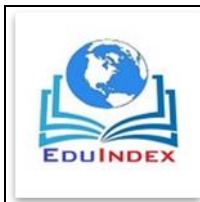
Tester Competency:

To ensure that the investigator was well versed in the techniques of conducting the test, the investigator had a number of practice sessions in the testing procedure, under the guidance of an expert. Tester competency was also evaluated together by reliability of tests.

Subjects Reliability:

The above test-retest coefficient of correlation method also established that subjects' reliability was significant at 0.05 level of confidence, as the same subjects were used under similar conditions by the same tester and no motivational techniques were used nor any training imparted.

Treatment Design:



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The pre-post random group design was used for the study. Two groups were made randomly. Each group of hundred subjects, one group (N=100) was named Treatment group and were assigned the duty of practice of Transcendental Meditation and the other group (N=100) opted to serve as restrictive group or non-meditators.

Treatment Procedure:

The study was conducted for a period of eight weeks in the month of July and August. The climatic condition was rainy (Humid) and atmospheric temperature was ranging between 28°C to 38°C.

Out of 200 students of G.B. Pant College 100 students were randomly selected as subjects for treatment group and the remaining 100 students opted as subjects for restrictive group.

Each subjects of treatment group learnt concentrative Meditation (breathing exercise). The subjects of treatment group practiced meditation for 15-20 minutes each day for eight weeks.

The researcher allowed the subjects of treatment group to be comfortable in their sitting position but to keep their back straight either in lotus or Bajrasan position. First, the researcher helped the subjects to perform breathing exercises for 2-3 minutes so as to normalize their body and prepare it for Transcendental meditation. In Transcendental meditation the subjects have to chant any Mantra. Thereafter treatment group practiced Transcendental Meditation for 20 Minutes starting with a silence of half minute and finishing it with a silence of two minutes with closed eyes and deep breathing.

Collection of Data:

The data for physiological variables were collected twice, that is before the start of study and after 8 weeks as to record the final performance of the tests.

All the scores were collected on the first day before teaching the meditation to the treatment group and repeated after a period of 8 weeks. Similarly the data were also collected from restrictive group.

Vital Capacity:

- Objective- To measure vital capacity.
- Equipment- Peak Flow Dry spirometer.
- Description- The spirometer was brought to zero position. The subject performed maximum inspirations and after clipping the nose, the air was blown out as intensively as possible from mouth in the mouth piece of instrument.
- Score – The amount of expired air was read directly from the calibrated scale and the score of vital capacity was recorded in liters.

The Paired Sample t-test is designed to compare means between pre test and post test of same group where there are restrictive and treatment group in different variables in each group. Ideally, these subjects are randomly selected from a larger population of subjects and assigned to treatments.

Once the data are collected and the assumptions to performing the t-test are satisfied, the means of the dependent samples in each two groups are compared. The mathematics for the t-test may

be performed by a statistical data analysis programs such as SPSS. The determination of whether there is a statistically significant difference between the two means is reported as a p-value. Typically, if the p-value is below a certain level (usually 0.05 or 0.01), the conclusion is that there is a difference between the two group means. The lower the p-value, the greater "evidence" that the two group means are different. The level of significant was kept at 0.05 levels.

Analysis and comparison of selected variable Vital Capacity in between pre and post test of college male students.

A researcher wants to examine whether the Vital Capacity of restrictive and treatment groups improved or not.

The null and alternative hypothesis for examining the mean difference in Vital Capacity of restrictive and treatment groups:

H₀: There is no difference between Vital Capacity of restrictive and treatment groups. i.e.

$$\mu_1 = \mu_c$$

H₁: There is difference between Vital Capacity of restrictive and treatment groups.

i.e. $\mu_1 \neq \mu_c$

Pair Sample T –Test of Vital Capacity Variable in between pre and post test of restrictive and treatment groups as below:

Table-1

Paired Samples Statistics of vital capacity

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Vital capacity	restrictive group pre test	373.7500	100	93.91963	9.39196
	restrictive group post test	378.9500	100	91.11901	9.11190
Pair 2 Vital capacity	treatment group pre test	370.9000	100	86.46065	8.64607
	treatment group post test	385.0000	100	76.77857	7.67786

Graph-1

Vital Capacity



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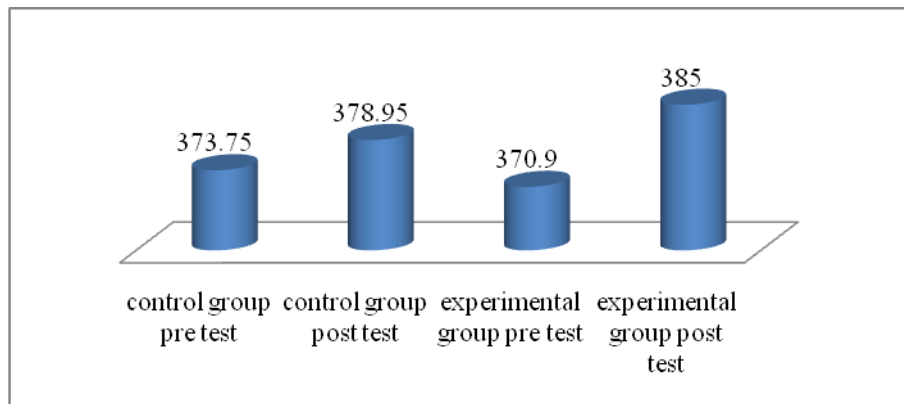


Table-2

Paired Samples Correlations of vital capacity

		N	Correlation	Sig.
Pair 1	restrictive group pre test & restrictive group post test	100	0.983	0.000
Pair 2	treatment group pre test & treatment group post test	100	0.972	0.000

As per the table, Paired Samples Correlations;

- (1) Pair 1 Vital capacity of restrictive group pre and post test correlation is 0.983 and its significance value is 0.000
- (2) Pair 2 Vital capacity of treatment group pre and post test correlation is 0.972 and its significance value is 0.000

Table-3

Paired Samples Test of vital capacity

	Paired Differences							
	95% Confidence Interval of the Difference							
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1 Vital capacity restrictive group pre - post test	-5.2000	17.2902	1.72902	-8.631	-1.7693	-3.007	99	.003
Pair 2 Vital capacity treatment group pre - post test	-14.100	21.7235	2.17235	-18.410	-9.7896	-6.491	99	.000

Table –(1) – Pair Samples Statistics displays the summary measures (Mean, N, Std. Deviation, Std. Error of Mean) of selected variable Vital Capacity for the Paired t-test.

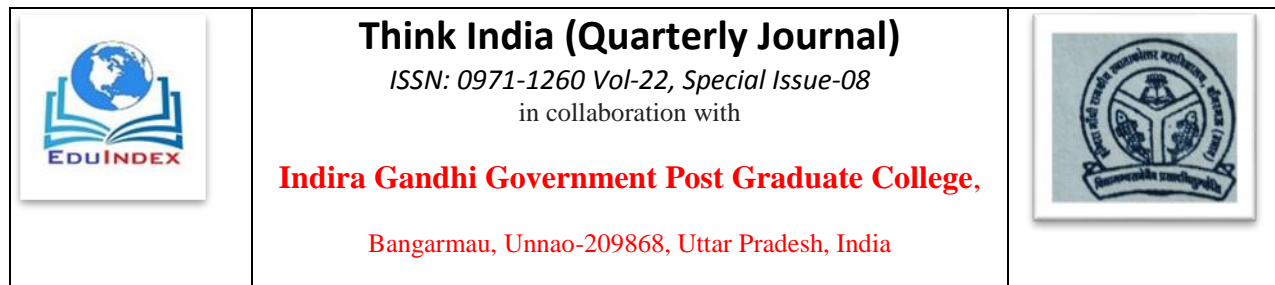


Table – (2) – Paired Samples Correlations provides the information related to correlation between restrictive group pre and post test as well as treatment group pre and post test of Vital Capacity.

Table – (3) – Pair Samples Test of both the groups; restrictive and treatment groups in pre and post test are as below:

[1] Pair 1 : Vital capacity restrictive group pre - post test:

Paired Samples Test gives the difference in mean of the vital capacity of pre test and post test of restrictive group is -5.2000. The table generated the value of t-statistic of -3.007 with associated significant value 0.003, which is less than 0.05 (chosen significance value). Therefore, we can reject the null hypothesis and say that there is improvement in vital capacity of post test by the students as compared to vital capacity of pre test. We can say that there is significant difference in Vital capacity in restrictive group.

[2] Pair 1: Vital capacity treatment group pre - post test:

Paired Samples Test gives the difference in mean of the vital capacity of pre test and post test of treatment group is -14.1000. The table generated the value of t-statistic of -6.491 with associated significant value 0.000, which is less than 0.05 (chosen significance value). Therefore, we reject the null hypothesis and say that there is improvement in vital capacity of post test by the students as compared to vital capacity of pre test. We can say that there is significant difference in Vital capacity in treatment group.

Conclusion:

Analysis and comparison of selected variable Vital Capacity in between pre and post test of college male students.

[1] Pair 1: Vital capacity restrictive group pre - post test:

Paired Samples Test gives the difference in mean of the vital capacity of pre test and post test of restrictive group is -5.2000. The table generated the value of t-statistic of -3.007 with associated significant value 0.003, which is less than 0.05 (chosen significance value). Therefore, we can reject the null hypothesis and say that there is improvement in vital capacity of post test by the students as compared to vital capacity of pre test. We can say that there is significant difference in Vital capacity in restrictive group.

[2] Pair 1: Vital capacity treatment group pre - post test:

Paired Samples Test gives the difference in mean of the vital capacity of pre test and post test of treatment group is -14.1000. The table generated the value of t-statistic of -6.491 with associated significant value 0.000, which is less than 0.05 (chosen significance value). Therefore, we reject the null hypothesis and say that there is improvement in vital capacity of post test by the students as compared to vital capacity of pre test. We can say that there is significant difference in Vital capacity in treatment group.

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