"A COMPARATIVE STUDY OF PRANAYAMA ON BREATH HOLDING CAPACITY, HEART RATE AND EXALE CAPACITY OF COLLEGE FEMALE STUDENTS"

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ABSTRACT

The purpose of the present study was to find out the effect of Pranayama on breath holding capacity, heart rate and exhale capacity of collegiate female students. For the purpose of the study college girls students were selected at random from the IIMT College of Saharanpur and their age ranged from 18 to 25 years. Eighty Girls were selected as subjects for this study. All the subjects were divided into two groups (Experimental group and control group) consisting of forty subjects each. The subjects were selected by using simple random sampling method. Stopwatch was used to measure the Breath holding capacity, stethoscope was used to counting the heart rate of the subjects and peak flow meter was used to measure the exhale capacity. The data was collected pre and post training programme of six week Pranayama training. To find out the significant difference on statistical analysis 't' test was used. The level of significance was set at 0.05 level. In this study it is observed that there is a significant difference between the pre and post experimental group in breath holding capacity, heart rate and exhale capacity. There is no significance difference between pre and post test of control group in breath holding capacity heart rate and exhale capacity. This study indicated that regular Pranayama is beneficial for human health and further generation.

Keywords : Pranayama, Breath Holding Capacity, Heart Rate & Exhale Capacity.

INTRODUCTION

Prana is the life force and energy that sustains all living things. As you breathing efficiently is the balance the prana in your body and open areas that may be blocked. Visualizing this flow of energy helps to focus our mind and improve our awareness of flow of prana in our body. Three part breath exercise strengthens our chest, lungs and diaphragm muscles, while increasing our lung capacity. Also called full yogic breath or complete yoga breath practicing this exercise can also calm your mind and relax your body. You should be comfortable performing the abdominal breath exercise. This abdominal breath exercise improves our ability to breathe more and deeply by increasing the air flow to the lower part of our lungs.

We may also find that this exercise helps to calm and relax our body and mind. As you perform this exercise, we should become aware of the rise and fall of our breath in our abdomen. As we breathe make sure we don't tighten our abdominal muscles or press our abdomen outward should expand naturally and remain soft throughout the exercise.

METHODOLOGY

Sample of the Study:

Eighty girls were selected as subjects for this study. All the subjects were divided into two groups consisting of forty subjects each. For the purpose of the study college girls students were selected at random from IIMT of Saharanpur. Their age ranges from 18 to 25 years.

Criterion Measures:

Following equipment's were used for the collection of data.

(i) **Breath Holding Capacity :** Stopwatch was used to measure the breath holding capacity.
(ii) **Heart Rate :** Stethoscope was used for counting the Heart Rate of the subjects.
(iii) **Exhale Capacity :** Peak Flow meter was used to measure the exhale capacity.

Pranayama Programme Design:

Six weeks of Pranayama Programme were given to the experimental group. The control group was not allowed to participate in any of the programme, except their routine physical activities. Measurements for the variables were taken at the beginning (Pre-test) and at the end of the experimental period after six weeks (Post-test). The data were collected for all the variables from both control and experimental groups. During this period the subjects were not allowed to participate in any training.

Programme Schedule:

Weeks	Pranayama	Pranayama Time (in Min.)
First & Second	Nadisuddhi Kapalbhati, Shitli Savasana	07 03
Third & Fourth	Nadisuddhi, Kapalbhati, Shitli Savasana	11 03
Fifth & Sixth	Nadisuddhi, Kamalbhati, Shitli Bhastrika Savasana	15 03

RESULT

To find out the significant difference between Pre-test and Post-test of experimental and control group 't'-test was applied. The findings related to this are presented in table 1 – 3.

TABLE – 1

Comparision of Breath holding capacity between Pre-test and Post-test of experimental and control groups.

Variable	Group	Test	N	Mean	S.D.	't'-ratio
Breath Holding Capacity	Experimental	Pre	40	16.83	2.08	14.39*
		Post	40	24.58	2.69	
	Control	Pre	40	17.33	2.94	0.96
		Post	40	17.96	2.94	

Significant at 0.05 level 't' 0.05 (78) = 2.02

The above table shows that the calculated 't' (14.39) is greater than the tabulated 't' (2.02) of Pre-test and Post-test of experimental group. It refers that there is a significant difference between Pre-test and Post-test of experimental group.

The above table also shows that the calculated 't' (0.96) is less than the tabulated 't' (2.02) of Pre-test and Post-test of control group. It refers that there is no significant difference between Pre-test and Post-test of control group. The scores are also illustrated in figure – 1.

Figure – 1 : Mean & S.D. of breath holding capacity between Pre-test and Post-test of experimental and control group.

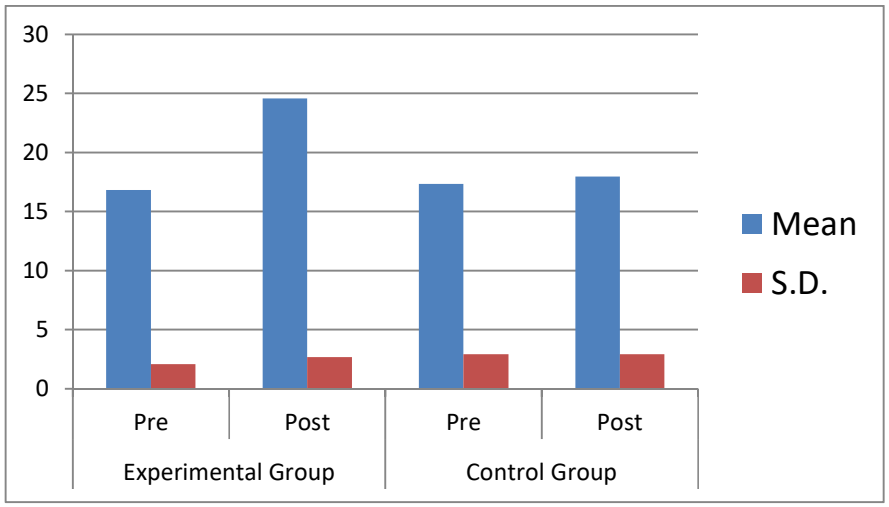


TABLE – 2

Comparison of Heart Rate between Pre-test and Post-test of experimental and control group

Variable	Group	Test	N	Mean	S.D.	't'-ratio
Heart Rate	Experimental	Pre	40	71.09	2.33	2.46*
		Post	40	70.68	2.13	
	Control	Pre	40	71.63	2.01	0.20
		Post	40	7.53	2.42	

Significant at 0.05 level 't' 0.05 (78) = 2.02

The above table shows that the calculated 't' (2.46) is greater than the tabulated 't' (2.02) of Pre-test and Post-test of experimental group. It refers that there is a significant difference between Pre-test and Post-test of experimental group.

The above table also shows that the calculated 't' (0.20) is less tan the tabulated 't' (2.02) of Pre-test and Post-test of control group. It refers that there is no significant difference between Pre-test and Post-test of control group. The scores are also illustrated in figure – 2.

Figure – 2 : Mean & S.D. of Heart Rate capacity between Pre-test and Post-test of experimental and control group.

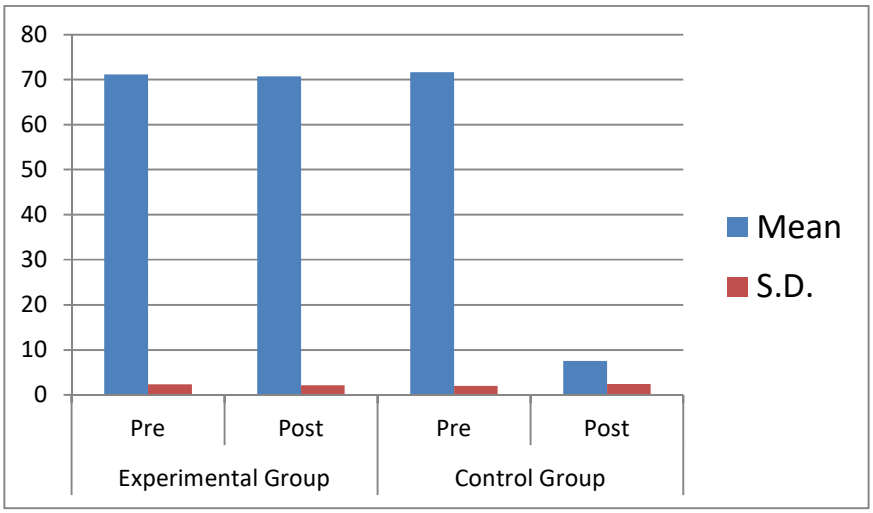


TABLE – 3

Comparison of Exhale Capacity between Pre-test and Post-test of experimental and control groups.

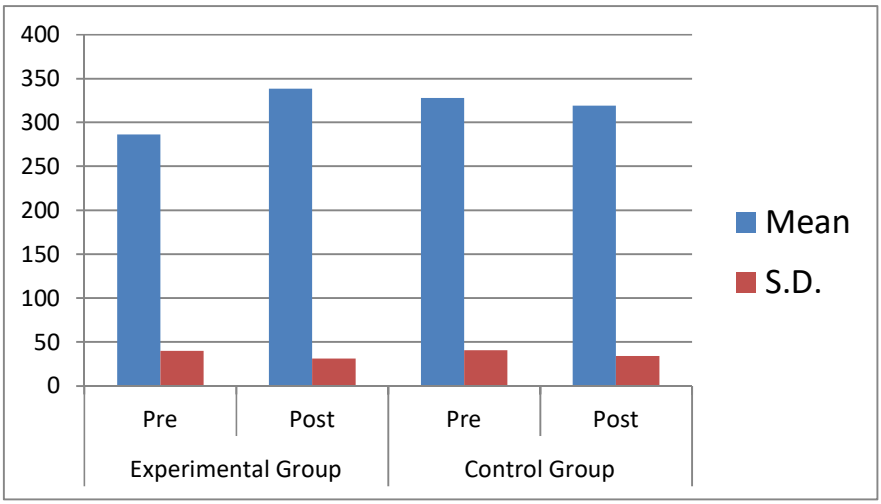
Variable	Group	Test	N	Mean	S.D.	't'-ratio
Exhale Capacity	Experimental	Pre	40	286.4	40.15	5.16*
		Post	40	338.3	31.45	
	Control	Pre	40	327.8	41.06	0.98
		Post	40	319.5	34.34	

Significant at 0.05 level 't' 0.05 (78) = 2.02

The above table shows that the calculated 't' (5.16) is greater than the tabulated 't' (2.02) of Pre-test and Post-test of experimental group. It refers that there is a significant difference between Pre-test and Post-test of experimental group.

The above table also shows that the calculated 't' (0.98) is less than the tabulated 't' (2.02) of Pre-test and Post-test of control group. It refers that there is no significant difference between Pre-test and Post-test of control group. The scores are also illustrated in figure – 3.

Figure – 3 : Mean & S.D. of Exhale Capacity between Pre-test and Post-test of experimental any control group.



DISCUSSION

On the basis of obtain results, it has been observed that there was no significant difference found between Pre-test and Post-test scores of Breath Holding Capacity, Heart Rate and Exhale Capacity of control group. But far as Pranayama programme (experimental training) is concern there was a significant difference found in Pre-test and Post-test scores of Breath Holding Capacity, Heart Rate and Exhale Capacity of experimental group. By the Pranayama training programme selected variables of experimental group were upgraded.

CONCLUSION

Within the limitations of the present study and on the basis of the findings the following conclusions were drawn.

Pranayama is an exact science. It is the regulating of breath or control of Prana which is the stoppage of inhalation and exhalation that follows after securing that steadiness of posture or rest, Asana. As the Bible states, "Lord formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living being.

In this research it is observed that there has been significant difference between the Pre-test and Post-test of experimental group in Breath Holding Capacity, Heart Rate and Exhale Capacity. There has been no significant difference between Pre-test and Post-test of control group in Breath Holding Capacity, Heart Rate and Exhale Capacity.

This study indicated that regular Pranayama is beneficial for human health.

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