
EFFECT OF KAPALBHATI ON BODY FAT PERCENTAGE OF UNIVERSITY STUDENTS

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Abstract:

The present study aimed at assessing the effect of Kapalbhati on body fat percentage of University Yogis. The subjects for the study were selected on the basis of random group design. Thirty (N=30) students were selected as subject for the present study from SGGs, Khalsa College, Mahilpur. The subject ranged between the age of 17 to 22 years. Experimental treatment was then assigned to group "A" while group "B" acts as control. Body composition analyzer was used to measure the Body Fat Percentage. The subjects underwent training for 12-week with the Kapalbhati. The difference in the mean of each group for selected variables was tested for the significance of difference by paired 't' test. The level of significance was set at 0.05. The result has shown the significant effect in body fat percentage since $\text{cal. } t (=3.742) > \text{tab. } t. 05(14) (=2.145)$.

Keywords: Kapalbhati, Body Fat,

INTRODUCTION

In recent years there has been considerable interest in scientific research on yoga in India and in the west. Today yoga being a subject of varied interest, has gained world wide popularity. Yoga has both preventive and therapeutic benefits. The process of Kapalbhati is related to the breathing process; however it is not a type of pranayam. But, certain sadhakas think in this manner and study Kapalbhati under the impression that they are studying a type of pranayam. However, process of cleaning the wind pipe is one of the shuddhikriya. The nature of every yogic practice is Psycho Physiological and if this conceptual background is not clearly understood, the whole outlook on yogic practices will be disturbed. The relation of yogic practice in terms of anatomy and physiology would remove many misconceptions about them. The word Kapalbhati is made up of two words, kapal meaning skull (skull includes all the organs under the skull too) and bhati means shining, illuminating. Body composition refers to the relative amounts of the different compounds in the body. The assessment of body composition is generally performed in order to determine and monitor one's health and fitness status, and to aid in planning training programs for athletes.

METHODS

SUBJECTS

The subjects for the present study were randomly. Thirty (N=30) male students were selected as subject for the present study from SGGS, Khalsa College, Mahilpur. All subjects ranged between the age of 17-22 years. The selected subjects were further divided into two groups. Experimental treatment was then assigned to group "A" and group "B" acts as control. The subjects were subjected to a twelve week Kapalbhathi training programme.

SELECTION OF VARIABLES

1. To find out the effect of Kapalbhathi on students of SGGS, Khalsa College, Mahilpur, Body Fat Percentage was selected as dependent for the study

TEST ADMINISTRATION

BODY FAT PERCENTAGE

Body Fat Percentage was measure by body composition analyzer. The subject was made to step on the scale and weight was taken. It gives the most accurate reading first time in the morning, on an empty stomach. Wear no shoes and minimal clothing, if any at all. Write down the weight. The body-fat analyzer has two galvanized handles to hold, a painless current of electricity is sent to upper body to measure the amount of subcutaneous fluid underneath skin. This is the body fat. To find out the body-fat percentage, input all of the information requested on the digital screen of the analyzer. Press the galvanized handles firmly, hit the "Start" button, extend your arms out straight and wait 7 seconds. Now write down your body-fat percentage. Use a calculator to multiply your weight by your body-fat percentage. For example, if you weigh 180 lbs. and you have 10 percent body fat, your body-fat mass is 18 lbs.

TWELVE WEEK OF KAPALBHATHI TRAINING PROGRAMME

In the present study the following five stages were made part of the Kapalbhathi technique:

STAGE-1

Find a comfortable seated position. Gently exhale all the air from lungs then inhale a little. Exhale rapidly like a gentle sneeze a sound with the mouth closed. Then inhale rapidly and begin to exhale and inhale in quick rhythm

STAGE-2

Inhale and exhale rapidly through both nostrils partially blocked. Control the air flow so that it enters through the nostrils.

STAGE-3

Inhale and exhale through the right nostril with the left nostril fully blocked. Breathe in and out of the same nostril. Switch after at least 5 breaths. So this time inhalations and exhalations are done through the left nostril.

STAGE-4

Inhale through the right nostril and exhale through the left.

STAGE-5

Inhale through both nostrils and exhale through the left then inhale through both nostrils and exhale through the right.

STATISTICAL PROCEDURE USED:

The random group design was used for the study. Two groups were made of the subjects each comprising of 15 subjects. The difference in the mean of each group for selected variable was tested for the significance of difference by “t” test. The level of significance was set at 0.05.

FINDINGS AND RESULTS

The study was conducted to find out the effects of Kapalbhathi on body fat percentage. The statistical analysis of data collected on thirty (N=30) subjects. For the chosen variable, the results pertaining to significant difference, if any, between experimental and control groups were assessed by “t” test and are presented in following tables:

TABLE-1			
BODY FAT			
PERCENTAGE OF EXPERIMENTAL			
GROUP			
	re-Test	Post-Test	
Sample size	15		15
Arithmetic mean	22.0333		23.6800
95% CI for the mean	20.7377 to 23.3290		22.5481 to 24.8119
Variance	5.4738		4.1774
Standard deviation	2.3396		2.0439
Standard error of the mean	0.6041		0.5277
Paired samples t-test			
Mean difference			1.6467
Standard deviation			1.7041
95% CI			0.7029 to 2.5904
Test statistic t			3.742
Degrees of Freedom (DF)			14
Two-tailed probability			P = 0.0022
			97

TABLE-2
BODY FAT PERCENTAGE OF CONTROL
GROUP

	Pre-Test	Post-Test
Sample size	15	15
Arithmetic mean	10.2467	10.3267
95% CI for the mean	8.8941 to 11.5992	9.0295 to 11.6238
Variance	5.9655	5.4864
Standard deviation	2.4424	2.3423
Standard error of the mean	0.6306	0.6048
Paired samples t-test		
Mean difference		0.08000
Standard deviation		0.6732
95% CI		-0.2928 to 0.4528
Test statistic t		0.460
Degrees of Freedom (DF)		14
Two-tailed probability		P = 0.6524

TABLE-3

MEAN, STANDARD DEVIATION (SD), STANDARD ERROR OF MEAN (SEM) OF BODY FAT
PERCENTAGE OF EXPERIMENTAL
AND CONTROL GROUP

Group	Number	Mean	.D.	EM	't' Value
Experimental (Pre-test)	15	22.0333	2.3396	0.6041	3.742
Experimental (Post-test)	15	23.6800	2.0439	0.5277	
Control (Pre-test)	15	10.2467	2.4424	0.6306	0.460
Control (Post-test)	15	10.3267	2.3423	0.6048	

*Significant at 0.05 level of confidence. "t" .05 (14) = 2.145

Table-3 shows that the mean of body fat percentage of pre-test of experimental group and post-test of experimental group was 22.0333 and 23.6800 respectively, whereas the mean of body fat percentage of pre-test of control and post-test of control group was 10.2467 and 10.3267. The "t" value in case of experimental group was 3.742 and for control group it was 0.460. Since cal. t (=3.742) > tab t.05 (14) (=2.145), Ho (null hypothesis) is rejected at .05 level of significance. Thus it may be concluded that twelve week training program of Kapalbhathi on university yoginis showed significant effect in body fat percentage. As per the study the above remark can be given at 95% confidence.

CONCLUSIONS&DISCUSSION

Since calculated “t” is greater than tab t.05, null hypothesis may be rejected at 0.05 level of significance. Thus it may be concluded that twelve week training program of selected Kapalbhathi on University yogis leads to significant effect in body fat percentage. As per the study the above remark can be given at 95% confidence.

From the results it is evident that the twelve week Kapalbhathi training programme had shown a significant improvement in body fat percentage. The findings are supported by the study conducted by Udupa K.N. on “Yogic and Non Yogic exercise: Improved Physiological variables of students” to determine the effects of yogic exercise on physiological variables showed a statistically significant ($P < .001$) improvement.

Findings of this exploratory study suggest that the treatment of twelve week Kapalbhathi training programme showed significant effect on body fat percentage

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