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EFFECT OF YOGIC PRACTICE ON SELECTED PHYSIOLOGICAL VARIABLES AMONG MIDDLE AGED OBESE MEN

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Abstract

The purpose of the present study was to find out the effect of Yogic practices on selected physiological parameters among Middle aged obese Men. For this purpose, 30 middle aged obese men were selected as subjects from Pudukottai District and they were divided randomly in to two equal groups with 15 each as experimental and control group. The experimental group underwent Yogic practice daily morning 60-minutes and the control group not given yogic practice. The training period for this study was eight weeks in a schedule of 5 days in a week. The pre and post test were conducted prior and after the training programme on the selected cardio respiratory parameters of resting heart rate, breath holding time and respiratory rate. The collected data's were statistically analyzed by using ANCOVA to find out the significant difference between the groups, if any. The significant level was fixed at 0.05 levels. It was concluded from the result of the study that the experimental group done the Yogic practice had significant impact on the selected Cardio Respiratory parameters of resting heart rate, breath holding time and respiratory rate among middle aged men. Further the mean value indicated that the experimental group considerably reduced the resting heart rate and respiratory rate and increased the breath holding time than control group.

Keywords: Yoga, Obesity, Body Mass Index, Breathe Holding Time and Respiratory Rate.

INTRODUCTION

Yoga is a needed as a powerful remedy not only for the day to day problems but also to overcome niggling health problems. The philosophy of yoga is "Caring, Sharing and empowering". Yoga is derived from the Sanskrit root "YUJ" which means join, unite, and merge. The practice of yoga integrates the body with mind and the mind with the soul. Yoga is a scientific system which brings harmony in body and mind. Asana play significant role in toning up the neuro-muscular glandular system of the body to maintain the vitality of bodily organs. Yoga provides the path to achieve greater perfection of the body, life and mind. Yoga, an ancient Indian concept, represents the way of life which endows perfect health comprising physical, mental, ethical and spiritual development. Yoga physically creates a toned, flexible, and strong body and physiologically improves respiration, energy, vitality and helps to maintain a balanced metabolism, promotes cardio and circulatory health, relieves pain and also improves athletic performance.

The body, mind and the divine are in perfect accord. Yoga is a Physiological, Psychosomatic and sacred order practiced by the Yogis of ancient India that advocates a way-of-life seamlessly and in perfect accord with oneself and his/her environment. Derived from Sanskrit Yoga translates to mean harmony in unity. Yoga is a complete life science and is the oldest system of personal development in the world encompassing the entire body, mind and spirit. It is the union between a person's own consciousness and the universal consciousness. The practice of Yoga exhibits a powerful and profound effect on the respiratory system, perhaps more than any other system of the body.

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have a negative effect on health. People are generally considered obese when their body mass index (BMI), a measurement obtained by dividing a person's weight by the square of the person's height, is over 30 kg/m^2, with the range 25–30 kg/m^2 defined as overweight. The WHO defines an adult who has a BMI between 25 and 29.9 as overweight - an adult who has a BMI of 30 or higher is considered obese - a BMI below 18.5 is considered underweight, and between 18.5 to 24.9 a healthy weight . Pal R, Saha M. (2013) found Yogic practice has the ability to improve, cardiovascular, cardiorespiratory efficiency and physical health. Madhavi et al., (1985) found that there was a significant reduction in body weight and fat fold thickness and an increase in lean body mass in normal healthy female volunteers practicing yoga. Mukesh Kumar Mishra et al. (2015) found effect of eight weeks yogic training was benevolent for the improvement of resting heart rate and vital capacity.

Obesity mean excessive body weight this imposes unnecessary strain on the body various physiological systems especially the heart circulatory, respiratory and eliminative system and predispose the person to the development of many serious metabolic

disease including diabetes, hypertension ,heart diseases and arthritis in addition it lead to lowered vitality, mental dullness and depression.

METHODOLOGY

For the purpose of this study 30 subjects were selected from college athletes studying in under graduate class. The subjects were divided in to two groups equally with 15 each as experimental and control group. Experimental group underwent one hour yoga training included 10 minutes of warm-up in the morning in all the scheduled training period. The training period for the study was eight weeks in a schedule of weekly five days. The one hour yoga training includes ten yogasanas, and two pranayamas. The Yogasanas are Padmasana, Sarvangasana, Halasana, Bhujangasana, Matsyasana, Chakarasana,Dhanurasana, Ardhamatsyenderasana, Sirashasana and Savasana, Pranayamasare Kapalabati and Shitali. The pre and post test were conducted on selected physiological variables Body Mass Index, Breathe Holding Time and Respiratory Rate

TESTING PROCEDURE

The pre and posttest were conducted prior and after the training programme on the selected physiological variables of resting heart rate, breathe holding time and respiratory rate. All the tests were carried out with standardized procedure.

STATISTICAL PROCEDURE

The analysis of covariance (ANCOVA) was used as a statistical tool to determine the significant difference on the data of pre and post mean obtained for body mass index, resting heart rate, breath holding time and respiratory rate between control and experimental group. The level of significance was fixed at 0.05 level of confidence.

OBJECTIVES OF THE STUDY

The objective of the study was to find out the effect of physiological variables of body mass index, breath holding time and respiratory rate.

RESULTS & DISCUSSIONS

The analysis of covariance on the data obtained on of body mass index, breath holding time and respiratory rate of pre and post tests are tabulated and presented in the tables I, II and III.

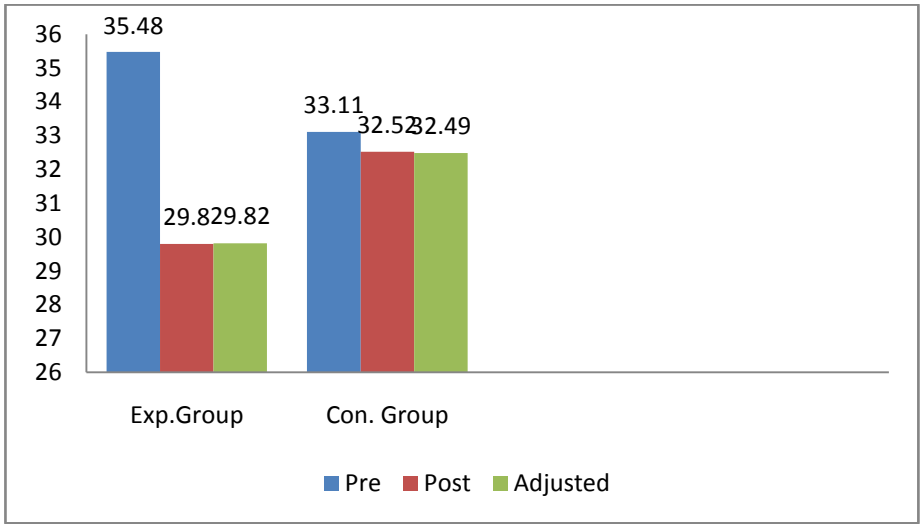
TABLE I
COMPUTATION OF ANALYSIS OF COVARIANCE OF BODY MASS INDEX

TEST	Experimental Group	Control Group	sv	Sum of Squares	df	Mean Square	F ratio
Pre test	35.48	33.11	B	42.008	1	42.008	-0.132
			W	-8866.42	28	-316.658	
Post test	29.8	32.52	B	55.488	1	55.488	6.54*
			W	237.504	28	8.482	
Adjusted Mean	29.82	32.49	B	53.784	1	53.784	
			W	241.218	27	8.933	6.02*
Mean gain	5.68	0.59					

*Significant at 0.05 level of confidence

It was observed from the above table-I that there was no significant difference in the pretest (F=0.132<4.20). The significant difference were observed through posttest (F=6.54>4.20) for df 1 and 28 and also on adjusted posttest (F=6.02 > 4.21) for df 1 and 27 at 0.05 level of confidence. There was a significant difference in body mass index and mean score indicated that the experimental group decreased body mass index than control group due to six weeks yoga practice.

FIGURE-1
BAR DIAGRAM SHOWING THE PRE, POST AND ADJUSTED TEST MEAN OF BODY MASS INDEX (SCORES IN NUMBERS)



RESULTS ON BREATH HOLDING TIME

The analysis of covariance on the data obtained for Breath Holding Time of pre and post test on experimental and control group were presented in Table-II.

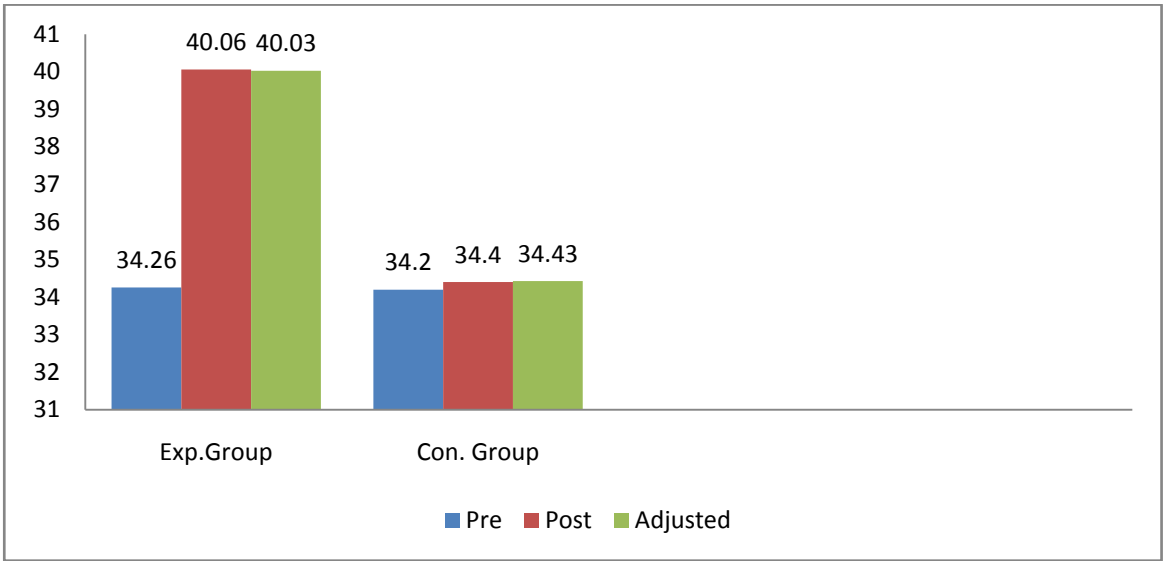
TABLE II
COMPUTATION OF ANALYSIS OF COVARIANCE OF BREATH HOLDING TIME

TEST	Experimental Group	Control Group	SV	SS	df	MS	F ratio
Pre test	34.26	34.2	B	0.0333	1	0.0333	0.004
			W	189.333	28	6.7619	
Post test	40.06	34.4	B	240.833	1	240.833	17.26*
			W	390.533	28	13.947	
Adjusted Mean	40.03	34.43	B	235.478	1	235.478	28.61*
			W	222.184	27	8.2290	
Mean gain	-5.8	-0.2					

*Significant at 0.05 level of confidence

It was observed from the above table-2 that there was no significant difference in the pretest ($F=0.004<4.20$). The significant difference were observed through posttest ($F=17.26>4.20$) for df 1 and 28 and also on adjusted posttest ($F=28.61 > 4.21$) for df 1 and 27 at 0.05 level of confidence. There was a significant difference in breath holding time and mean score indicated that the experimental group increased breath holding time than control group due to six weeks yoga practice.

FIGURE-3
BAR DIAGRAM SHOWING THE PRE AND POST TEST SCORE ON BREATH HOLDING TIME
(Scores in seconds)



RESULTS ON RESPIRATORY RATE

The analysis of covariance on the data obtained for Respiratory Rate test of pre and post test on experimental and control group were presented in Table-III

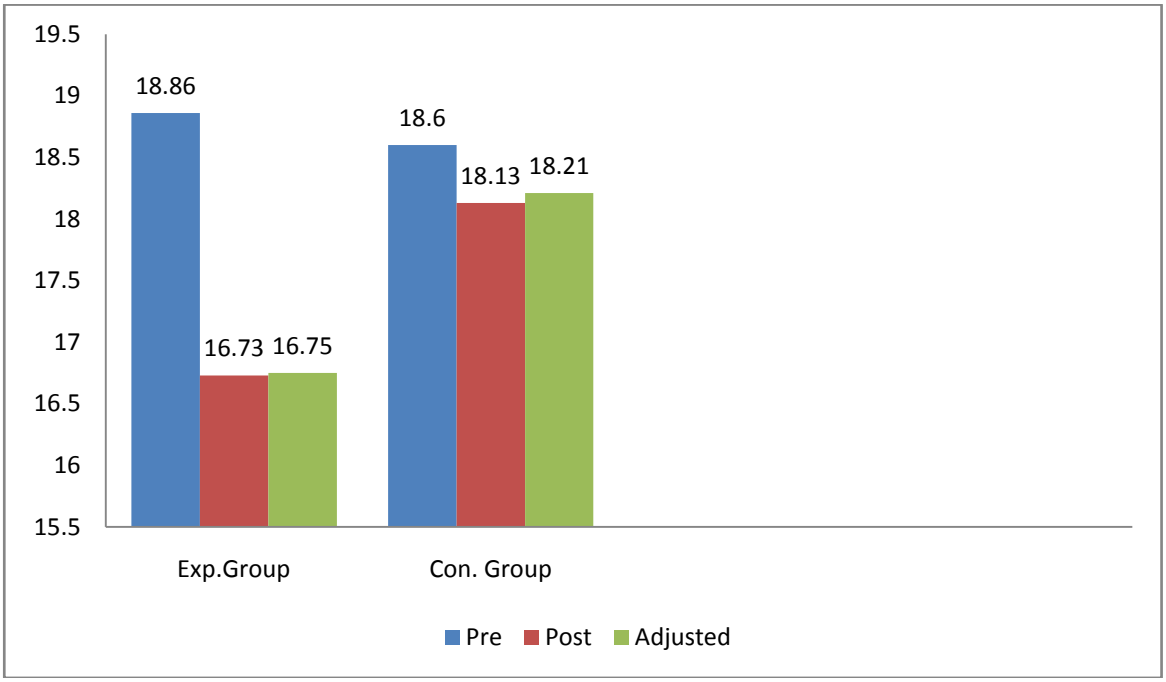
TABLE III
COMPUTATION OF ANALYSIS OF COVARIANCE OF RESPIRATORY RATE

TEST	Experimental Group	Control Group	SV	SS	df	MS	F ratio
Pre test	18.86	18.6	B	0.533	1	0.533	0.17
			W	83.333	28	2.976	
Post test	16.73	18.13	B	14.7	1	14.7	6.78*
			W	60.666	28	2.166	
Adjusted Mean	16.65	18.21	B	18.156	1	18.155	
			W	30.346	27	1.1239	16.15*
Mean gain	2.13	0.46					

*Significant at 0.05 level of confidence

It was observed from the above table-III that there was no significant difference in the pretest (F=0.179<4.20). The significant difference were observed through posttest (F=6.78>4.20) for df 1 and 28 and also on adjusted posttest (F=16.15 > 4.21) for df 1 and 27 at 0.05 level of confidence. There was a significant difference in body mass index and mean score indicated that the experimental group decreased respiratory rate than control group due to six weeks yoga practice.

FIGURE-3
BAR DIAGRAM SHOWING THE PRE AND POSTTEST MEAN OF RESPIRATORY RATE
(Scores in Numbers)



CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn

1. It was concluded that Yoga significantly altered Body Mass Index of the middle aged obese men due to yogic training.
2. It was concluded that Yoga significantly altered Breath Holding Time of the middle aged men due to yogic training.
3. It was concluded that Yoga significantly altered Respiratory Rate of the middle aged obese men due to yogic training.
4. It was proved from the study that the yogic training is benevolent to improve the physiological efficiency of middle aged obese men.

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