

INFLUENCE OF YOGIC PRACTICES AND SWIMMING PROGRAMME ON VITAL CAPACITY OF DIABETIC PATIENTS

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ABSTRACT

The purpose of the study was to determine the effect of yogic practices and swimming Programme on vital capacity of diabetic patients. The subjects of the study were sixty Diabetic patients selected from Dindigul District in Tamilnadu. Their age group ranges from thirty-five to forty five. The subjects were randomly assigned into four groups with fifteen subjects in each. The experimental group I would considered, as control group not attend any treatment and the experimental group II underwent freestyle swim for forty-five minutes in morning and evening that was 10 minutes swimming and 10 minutes rest. Third group underwent Yoga practices for forty-five minutes in morning and evening. Fourth Group underwent Yoga practices for forty-five minutes in morning and swimming Programme for forty-five minutes in evening. Above trainings would be given to the subjects for twelve weeks, six days per week. The data collected experimental group prior and after experimentation on vital capacity were statistically examined by using 't' test and analysis of covariance (ANCOVA). scheffes post hoc test is used to find out the paired means differences. To test the significance, 0.05 level of confidence was used. The analysis of co-variance of Vital Capacity indicated that experimental group II (Walking), experimental group III (Yoga), and experimental group IV (Walking and Yoga), were significantly improved the vital capacity. It may be due to the effect of Yoga, Walking and Yoga and Walking training. The findings of the study also showed that the experimental group IV had reduced Vital Capacity more than the experimental group III & II. It was further showed that the experimental group II was better than experimental group I in improving the vital capacity.

Key words: Yogic practices, swimming Programme, vital capacity and diabetic patients

INTRODUCTION

Good health is our most precious possession. One of the ways to improve physical fitness is by regular exercise. Healthy lifestyle is to optimal health and quality of life. Diabetes is a silent killing metabolic disease. Yoga is simply a means of maintaining health and well being in an increasingly

stressful society. Relaxations techniques help to maximize the effectiveness of ever-diminishing time-off. In an age of mobile phones and twenty-four hour shopping, yogic practices make great personal and even business sense. It is a condition in which the pancreas has no longer produces enough insulin or stops the production so that glucose in the blood cannot absorbed by the cells of the body. Now the researchers found, physical inactivity is one of the main reasons for the cause of diabetes. Diabetes is a wasting disease in which the mechanism of strong glucose in the body is hindered. Modern man is the lack of physical fitness and which threaten to disrupt life totally. Yogic life style, yogic attitudes and various yogic practices help man to strengthen his fitness. Vital capacity is the maximal volume of air that can be forcefully exhaled from the lungs following a maximum inspiration. This fitness is mainly connection with respiratory capacity. So the diabetic patients need more vital capacity for doing his regular activities without fatigue.

METHODOLOGY

Subjects

The purpose of the study was to determine the effect of yogic practices and swimming Programme on vital capacity of diabetic patients. The subjects of the study were sixty Diabetic patients selected from Dindigul District in Tamilnadu. Their age group ranges from thirty-five to forty five. The subjects were randomly assigned into four groups with fifteen subjects in each.

Training

The experimental group I would considered, as control group not attend any treatment and the experimental group II underwent freestyle swim for forty-five minutes in morning and evening that was 10 minutes swimming and 10 minutes rest. Third group underwent Yoga practices for forty-five minutes in morning and evening. Fourth Group underwent Yoga practices for forty-five minutes in morning and swimming Programme for forty-five minutes in evening. Above trainings would be given to the subjects for twelve weeks, six days per week.

The following yogic practices were given to the experimental group III and IV, one minute for each posture and one-minute rest after each posture. Surya Namaskar for five minutes. Padmasana, Sarvangasana, Halasana, Shalabasana, Bhujangasana, Dhanurasana, Matsyasana, Paschimottanasana, Yoga Mudrasana and Shavasana. Pranayama- Nadi suddhi pranayam by alternate nostril for fifteen minutes, Meditation and Yoga Nidra for ten minutes. Factors like habits, life style, daily routine, diet and others that may have an effect on the results of the study were not taken into consideration.

Test

A six liter wet spiro-meter was used for measuring the vital capacity of diabetic patients.

Statistical Technique

The data collected experimental group prior and after experimentation on vital capacity were statistically examined by using 't' test and analysis of covariance (ANCOVA). Scheffe's post hoc test is used to find out the paired means differences. To test the significance, 0.05 level of confidence was used.

RESULT

Table-I: Mean and 'T' Values on Vital Capacity

Tests	Control Group	Swimming Group	Yoga Group	Swimming & Yoga Group
Pre-Test (Mean $\pm$ SD)	2021.333 $\pm$ 182.360	2053.333 $\pm$ 170.824	2055.333 $\pm$ 289.035	2061.333 $\pm$ 149.851
Post-Test (Mean $\pm$ SD)	2023.333 $\pm$ 182.587	2301.333 $\pm$ 143.520	2329.333 $\pm$ 274.733	2454.667 $\pm$ 219.182
't' test	1.382	9.890*	9.520*	11.271*

*Vital capacity in Table value required for 0.05 level of significance with df 14 is 2.15.

Table- II: Analysis of Covariance on Vital Capacity

Adjusted Post-test mean				S o V	SS	df	MS	F
Control Group	Swimming Group	Yoga Group	Walking & Yoga Group					
2047.384	2296.342	2322.53	2442.414	B	1230692.26	3	410230.75	41.63*
				W	542032.98	55	9855.15	

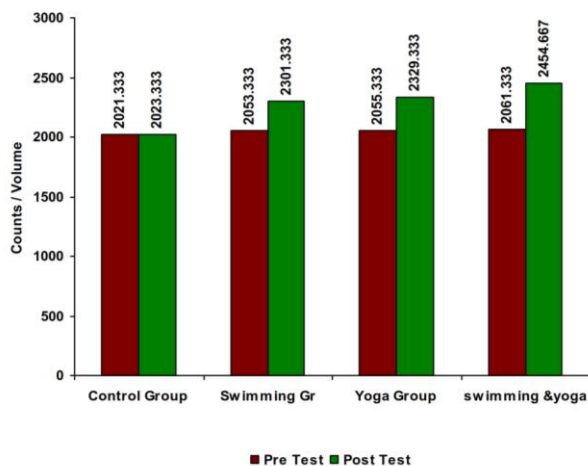
* Vital capacity in The table value required for 0.05 level of significance with df 3 & 55 is 2.78

Table-III: Scheffe's Test for Differences of the Adjusted Post-Test Paired Means on Vital Capacity

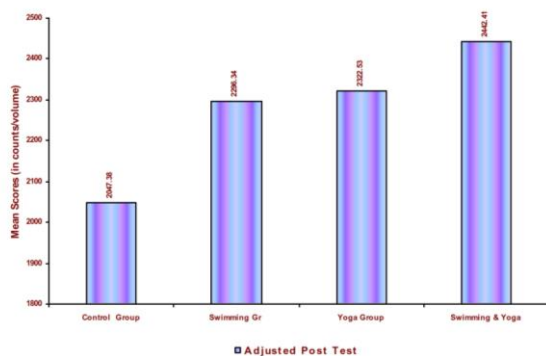
Adjusted Post-test means				Mean Differences	Confidence Interval
Control Group	Swimming Group	Yoga Group	Swimming & Yoga Group		
2047.384	2296.342			248.957*	104.685
2047.384		2322.526		275.142*	
2047.384			2442.414	395.030*	
	2296.342	2322.526		26.185	
	2296.342		2442.414	146.073*	
		2322.526	2442.414	119.888*	

* Significant at 0.05 level.

The pre and post-test mean values of Control, swimming, Yoga and swimming & Yoga groups on vital capacity are graphically presented in Figure I.



The adjusted post-test mean values of Control, Swimming, Yoga and Swimming & Yoga groups on vital capacity are graphically presented in Figure II.



DISCUSSION

During strenuous exercise the size of the chest cavity and alveols was increased due to the muscles involved in the inspiration and expiration. The tidal volume is increased several times over its resting value. This change in tidal volume is brought about primarily from a decrease in the inspiratory reserved volume although the expiratory reserve volume is also lowered somewhat. Blood flow increases in the capillaries of the lungs during exercise, the available gas volume space is somewhat increased, and as a result there is generally a slight increase in Vital Capacity as well as in the total lung capacity. During exercise residual volume and functional residual capacity will both be slightly increased over the resting values. Although it has been demonstrated that the body size is proportional to Vital Capacity and total lung capacity with the exception of tidal volume (Shaver, 1982).

During heavy exercise tidal volume, inspiratory reserve volume and expiratory reserve volume to meet the increased needs of the cells for more O_2 and removal of excessive CO_2 . Tidal volume approaches vital capacity because of excessively deep

breaths rapidly exhaust the inspiratory and expiratory muscles bringing VO_2 maximum increases, so Vital Capacity is also increases (Berger, 1982).

CONCLUSION

The analysis of co-variance of Vital Capacity indicated that experimental group II (Walking), experimental group III (Yoga), and experimental group IV (Walking and Yoga), were significantly improved the vital capacity. It may be due to the effect of Yoga, Walking and Yoga and Walking training.

The findings of the study also showed that the experimental group IV had reduced Vital Capacity more than the experimental group III & II. It was further showed that the experimental group II was better than experimental group I in improving the vital capacity.

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