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Effect of Yogic Practices and Weight Lifting on selected Physiological Parameters of Youth: A quasi experimental study

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Abstract:
The modern life lures us with comfort. In order to make our life convenient and comfortable we suffer from hypertension, obesity and cardiac problems. However, our country has hi-tech medical facilities but we are still leading an unhealthy, unstable and stressful life. In this condition, yoga can bring peace to mind, soul and body. You can go to many Spiritual retreats in Himalayas. For the present study, a total of thirty (30) males (N=30) participants were selected randomly from shivamogga district. The age of the participants ranged between 20 to 30 years. All subjects were healthy and were regularly practicing yoga and weight lifting
Keywords: Anxiety, Obesity, Hypertension, Physiology, Psychology.

Introduction

The modern life lures us with comfort. In order to make our life convenient and comfortable we suffer from hypertension, obesity and cardiac problems. However, our country have hi-tech medical facilities but we are still leading an unhealthy, unstable and stressful life. In this condition, yoga can bring peace to mind, soul and body. You can go to many Spiritual retreats in Himalayas.

Yoga teaches us to lead a healthy life. It improves creativity, concentration and sharpens our memory. In the hustle and bustle of modern life, our emotional stability declines. But yoga prevents that situation and improves stamina, muscle strength and mental stability. Most exercise triggers the release of "feel-good" chemicals in the brain. These mood boosting chemicals include brain messengers such as dopamine, serotonin, and norepinephrine. Although yoga movements are slow and controlled, they still elevate your heart rate, make the muscles work hard, and stimulate the release of brain chemicals. As a result, yoga can make you happier.

Obesity: Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. A body mass index (BMI) over 25 is considered overweight, and over 30 is obese. The issue has grown to epidemic proportions, with over 4 million people dying each year as a result of being overweight or obese in 2017 according to the global burden of disease.

Hypertension: Hypertension (high blood pressure) is when the pressure in your blood vessels is too high (140/90 mmHg or higher). It is common but can be serious if not treated.

People with high blood pressure may not feel symptoms. The only way to know is to get your blood pressure checked.

Physiology: Physiology is the study of how the human body works. It describes the chemistry and physics behind basic body functions, from how molecules behave in cells to how systems of organs work together. It helps us understand what happens in a healthy body in everyday life and what goes wrong when someone gets sick.

Psychology: Psychology is the scientific study of the mind and behavior. Psychologists are actively involved in studying and understanding mental processes, brain functions, and behavior. The field of psychology is considered a “Hub Science” with strong connections to the

medical sciences, social sciences, and education. At Ohio State, the Department of Psychology is organized into eight areas, working to investigate critical aspects of the brain and human behavior.

Physical fitness: Physical fitness as "one's ability to execute daily activities with optimal performance, endurance, and strength with the management of disease, fatigue, and stress and reduced sedentary behavior." The purpose of the study was to find out the effect of yogic practices on selected physiological variables of school students. Aim of this study was to evaluate the effects of yogic practice in some cardiovascular and respiratory parameters of overweight females after menopause. Background: Non pharmacological management of cardiorespiratory efficiency on overweight postmenopausal women. Materials and Methods: A total of 15 overweight (BMI > 25 kg/m2 and < 30 kg/m2) females after menopause (age 53.7 ± 1.04, Mean ± SEM) were participated in a 03 weeks of yoga program for 06 days a week for 1 hour daily. Blood pressure and heart rate was recorded using Omron BP monitor. Rate pressure product and double product was measured using standard formula. Respiratory rate and breath – hold time was recorded using standard protocol. Paired t-test was performed to find out any significant different between the data collected before and after yogic practice. For the present study, a total of thirty (30) males (N=30) participants were selected randomly from shivamogga district. The age of the participants ranged between 20 to 30 years. All subjects were healthy and were regularly practicing yoga and weight lifting. All of them resided in the jurisdiction of Shivamogga district. The concept of yoga is helpful for the treatment of bronchial asthma. During recent years, a lot of research work has been done to show the beneficial of yoga training. The present study was undertaken to assess the effects of yogic practices on selected physiological variables among asthmatic women. The subjects were selected randomly. It was hypothesized that there would be a significant difference in physiological variables such as Pulse rate and Vital capacity among asthmatic women due to the influence of yogic practices. To attain the purpose of the study, 45 women were suffering a lot with asthma from Coimbatore city aged between 20 to 25 years were selected randomly into experiment group and control group of 15 subjects each. Experiment group 1 goes through training for 6 weeks, six days a week for a maximum of one hour in the morning. The control group II was kept in active recline. The pretest and posttest were conducted before and after the training for both the groups. Pulse rate and Vital capacity were measured by using spirometer and sphygmomanometer. The data collected from the groups before and after the training period were statistically analyzed by using Analysis of Co-Variance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance. The result of the study showed that the Vital capacity was significantly increased and Pulse rate was decreased by the result of Yogic practices. Hence, the hypothesis was accepted at 0.05 level of confidence. This randomized controlled has concluded that the yogic practice is beneficial for the asthmatic persons the variables taken are given the results Vital capacity using spirometer helped to increase the breathing capacity and Pulse rate decreased among the asthmatic women.

Selection of test items: Standard tests were used for assessing the variables selected for the present study. The details of tests are given in table 3.1 as below.

RESULTS OF THE STUDY AND INTERPRETATION

This chapter provides detailed information on analysis of data and results of the study, their interpretations in terms of discussion on findings and discussion on hypotheses.

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Analysis of data: The raw data Anxiety, Body fat, Blood pressure and pulse rate were subjected to descriptive statistics and the results are provided in table 4.1 as below.

Table 4.1 Descriptive results of Anxiety and selected physiological variables pertaining to yoga practicing and weight lifting group

Variables	**Exercise intervention**	N	Mean	Std. Deviation	Std. Error Mean
Anxiety levels	Weight lifting group	30	36.27	7.19	1.31213
	Yoga practice group	30	38.83	7.14	1.30435
Body Fat percentage	Weight lifting group	30	23.88	6.22	1.13514
	Yoga practice group	30	24.56	6.77	1.23604
Systolic blood pressure	Weight lifting group	30	129.53	20.08	3.66679
	Yoga practice group	30	125.40	19.97	3.64600
Diastolic blood pressure	Weight lifting group	30	87.73	14.77	2.69735
	Yoga practice group	30	83.73	15.44	2.81985
Pulse rate	Weight lifting group	30	77	12.04	2.19791
	Yoga practice group	30	84	19.37	3.53585

The mean scores of Anxiety in Weight lifting group was 38.83±7.14; Body fat percentage was 24.56±6.77; Systolic blood pressure was 125.40±19.97; Diastolic blood pressure was 83.73±15.44; and Pulse rate was 77±12.04. Similarly, the mean scores of Anxiety in Yogic practice group was 36.27±7.19; Body fat percentage was 23.88±6.22; Systolic blood pressure was 129.53±20.08; Diastolic blood pressure was 87.73±14.77; and Pulse rate was 84±19.37. The descriptive results were treated with 't' test for independent test. The result on comparative statistics is given in table 4.2 as below.

Table 4.2 Summary of 't' test for differences in Anxiety and selected physiological variables pertaining to yoga practicing and weight lifting group

Variables	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**
Anxiety levels	-1.387	58	.171	-2.56667	1.85014
Body Fat percentage	-.408	58	.685	-.68433	1.67819

Systolic blood pressure	.799	58	.427	4.13333	5.17095
Diastolic blood pressure	1.025	58	.310	4.00000	3.90221
Pulse rate	-1.721	58	.091	-7.16667	4.16330

From table 4.2 it is clear that there is no significant difference in anxiety, body fat percentage, systolic blood pressure, diastolic blood pressure and pulse rate between yoga practicing and weight lifting group. All the obtained 't' value are lower than the table value (2.000) required for significance at 0.05 confidence level.

Discussion on findings

It is found that there is no significant difference in anxiety, body fat percentage, systolic blood pressure, diastolic blood pressure and pulse rate between yoga practicing and weight lifting group. The yoga practicing and weight lifting groups both receive equal amount of physical activity.

Table 3.1 Details of selection of variables, tests and their units

Sl. No.	Variables	Tests	Units
1.	Anxiety	Zung self-rating anxiety scale (SAS)	Rating scale
2.	Body fat	Body fat analysis	Percentage
3.	Systolic blood pressure	Omron 10 Series blood pressure testing	Mm/Hg
4.	Diastolic blood pressure	Omron 10 Series blood pressure testing	Mm/Hg
5.	Pulse rate	Omron 10 Series blood pressure testing	Counts

Zung self-rating anxiety scale (SAS):

The Zung SAS (1971) is a self-report scale whose 20 items cover a variety of anxiety symptoms, both psychological (e.g, "I feel afraid for no reason at all" and "I feel like I'm falling apart and going to pieces") and somatic (e.g., "My arms and legs shake and tremble" and "I feel my heart beating fast.") in nature. Responses are given on a 4-point scale which range from 1 (none, or a little of the time) to 4 (most, or all of the time). Participants are instructed to base their answers on their experiences over the last week. Items include both negative and positive (e.g., "I fall asleep easily and get a good night's sleep.") experiences, with the latter being reverse scored. Raw scale scores for the SAS range from 20 to 80. The SAS has satisfactory psychometric properties.

Omron 10 Series blood pressure testing

The blood pressure was assessed through a standard pre-calibrated automated Omron 10 Series blood pressure monitor. Purpose: To measure the systolic and diastolic blood pressure.

Equipment used: Automated Omron 10 Series digital blood pressure monitor, different size of cuffs, table, chair, data entry sheet, pen and writing pad. Procedure for Blood Pressure measurement:

Results:

The raw data Anxiety, Body fat, Blood pressure and pulse rate were subjected to descriptive statistics and the results are provided. The mean scores of Anxiety in Weight lifting group was 38.83±7.14; Body fat percentage was 24.56±6.77; Systolic blood pressure was 125.40±19.97; Diastolic blood pressure was 83.73±15.44; and Pulse rate was 77±12.04. Similarly, the mean scores of Anxiety in Yogic practice group was 36.27±7.19; Body fat percentage was 23.88±6.22; Systolic blood pressure was 129.53±20.08; Diastolic blood pressure was 87.73±14.77; and Pulse rate was 84±19.37. The descriptive results were treated with't' test for independent test.

Summary:

The concept of the modern world as distinct from an ancient or medieval world rests on a sense that the modern world is not just another era in history, but rather the result of a new type of change. The modern life lures us with comfort. In order to make our life convenient and comfortable we suffer from hypertension, obesity and cardiac problems. Yoga teaches us to lead a healthy life. It improves creativity, concentration and sharpens our memory. In general, yogic practices reduce the resting heart rate and blood pressure.

Conclusion:

On the basis of the results of the present investigation it is concluded that there is no significant difference in Anxiety, Body fat percentage, Systolic and Diastolic blood pressure and pulse between yoga practicing and weight lifting group.

Recommendations: The following recommendations are made by the investigator on the basis of the findings of the present investigation.

1. Yoga practicing group should select specific practices for desired results.
2. Weight lifting group should be specific in determining desired effects
3. A similar study may be conducted on larger samples.
4. A similar study may be conducted with different tests than those selected in the present investigation.

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