
EFFECTS OF FOUR WEEKS YOGA TRAINING ON BODY COMPOSITION IN YOUNG HEALTHY SUBJECTS

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Abstract

The objective of this study was to assess about the effects of 4-week yoga training on body composition in young healthy subjects with the help of body composition analyser (BCA) machine and analyse the significant changes takes place in the components of body composition such as Skeletal Muscle Mass (Kg), Body Fat Mass, Percent Body Fat, Body Mass Index, Total Body Water(L), Protein (Kg); this assessment is done for a period of 4-weeks.

Participants: Total data were obtained from 20 students from the Delhi Pharmaceutical Sciences and Research University, Delhi.

Procedure: A total number of 20 female subjects from university to be volunteer for the research work. All the subjects to be undergo yoga practices for four weeks; 2-3 Days prior to the start of four-week training of yoga practice, recordings of body composition test to be taken for later comparison of data to see the changes in individuals participating. Here researchers conducted the study using equipment's such as **Body composition Analyzer (BCA) machine**.

Results: t-test indicates the changes in the components of body composition, the p-value of skeletal muscle mass, Body Fat Mass, Percent Body Fat, Body Mass Index, Total Body Water(L), Protein (Kg) was **0.0023433025, 0.171678486, 0.448672807, 0.02129331, 0.002817006, 0.003858747**

respectively, as the hypothesis is directional and It is already knew that there would be a significant change in before and after yoga training. The total number of samples (N-20) in which all the participants came daily and got evaluated.

Conclusions: The daily performing of Yog asanas just for 4-weeks for 50 minutes, result in overall development of body composition components in all the female subjects.

Keywords: Yoga, body composition, percent body fat, BCA machine, Female subjects.

Introduction:

Obesity is a metabolic disorder with excessive fat accumulation in different parts of the body, and it is a risk factor for cardiovascular and metabolic disorders [1]. Regular yoga practice reduces body fat and oxidative stress. Yoga training may be helpful to reduce the chance of occurrence of various diseases and helps to maintain normal healthy lifestyle [2]. Yoga known to be add-on treatment may be effective for obesity control [3]. Not only our eating patterns but also our working state leads to all these problems which hinder young generations growth and development but also their body composition as they having pain due to prolonged sitting in front of their desktop working which are linked to cardiovascular diseases and obesity.

Selection of subject

The researcher had selected 20 female college students from ASSRM and DPSRU for the assessment of changes in body composition for 4-week yoga training. The average age of the participant was selected from 18 to 22 years. All the participants had been selected randomly as they all had volunteered to be a part of research.

Selection of variables

- Based on literary evidence, correspondence with the expert and

researcher own understanding and keeping feasibility criterion in mind, the selected variables were as follows: -

- Skeletal Muscle Mass
- Body Fat Mass
- Percent Body Fat
- Total body water
- Protein
- Body Mass Index

Criterion Measures

The criterion Measures for the study is about yoga effects on body composition of subjects.

METHODOLOGY

Administration Test

A total number of 20 female subjects from university to be volunteer for the research work. All the subjects to be undergo yoga practices for four weeks, 2-3 Days prior to the start of four-week training of yoga practice recordings of body composition test to be taken for later, comparison of data to see the changes in individuals participating. Here researchers will conduct the study using equipment's such as Body composition Analyser (BCA) machine at the end of four weeks of training.

• TRAINING PROTOCOL

The training protocol was for 4 weeks;
Asanas executed for test group:

YOGA ASANAS	DURATION(MIN)
1. Matsyasana	3
2. Bhujangasana	3
3. Dhanurasana	3
4. Naukasana	3
5. Shalabhasana	3
6. Shavasana	3
7. Poorvottasana	3
8. Adho Mukha Svanasana	3
9. Veerbhadradasana	3
10. Trikonasana	3
	TOTAL DURATION: 50MIN

Literature Review

1. **Na Nongkhai MP et al (2021)** aimed to assess the effect of continuous yoga (asanas, Pranayama, and Surya Namaskar yoga) on body composition in overweight Participants. Forty (N=40) adolescents with obesity were enrolled in this study. Body Composition, including body weight (BW), body mass index (BMI), body fat mass (BFM), And muscle mass, was evaluated using tetrapolar bioelectrical impedance (BIA). Findings demonstrate continuous yoga practice may be used as an alternative therapy for Obesity prevention and health promotion in adolescents with obesity.
2. **Indranil Manna (2018)** determined the effects of Yoga Training on Body Composition And Oxidant-Antioxidant Status among Healthy Male, 95 (n = 95) healthy male volunteers Within the age group of 18–24 years were included, 35 (n = 35) volunteers were excluded. The remaining 60 (n = 60) volunteers were randomly divided into two groups: (a) Yoga Group (n = 30) and (b) Control Group (n = 30). Results are concluded as there was a Significant reduction ($P < 0.001$) in the percentage of body fat.
3. **Rshikesan PB et al (2017)** evaluated the effect of 14 weeks of yoga intervention on body composition and sleep quality, yoga group (n = 40; age; 40.03 ± 8.74 years) and control group (age; 42.20 ± 12.06 years), it assess the effect of integrated a Calibri Bold approach of yoga therapy for body composition and quality of sleep in adult obese male.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

In this chapter the analysis of data, result of study, discussion of findings and discussion of the study have been described. Further to attain the objectives of the study, the following analysis pattern was applied.

- The descriptive statistics mean, standard deviation of the selected 20 female subjects was measured between the age group of 18-22.

Degree of Freedom= 20-1=19

• Result of Study

The results of this study shows a statistically significant results which leads to the positive outcome on body composition of subjects overall health and well-being. There's had been a total number of 20 female subjects from university which volunteered for the research work. All the subjects participated had undergo yoga practices for four weeks, 2-3 Days prior to the start of four-week training of yoga practice recordings of body composition test had taken for the comparison of data where we saw the changes in individuals participating and there changes follows a plateau which leads to the significant loss of body weight, percent body fat, and increase in skeletal muscle mass, total Body Water and protein. Here researchers had conducted the study using equipment's such as Body composition Analyser (BCA) machine at the end of four weeks of training which provides a detailed analysis and description of components of body composition

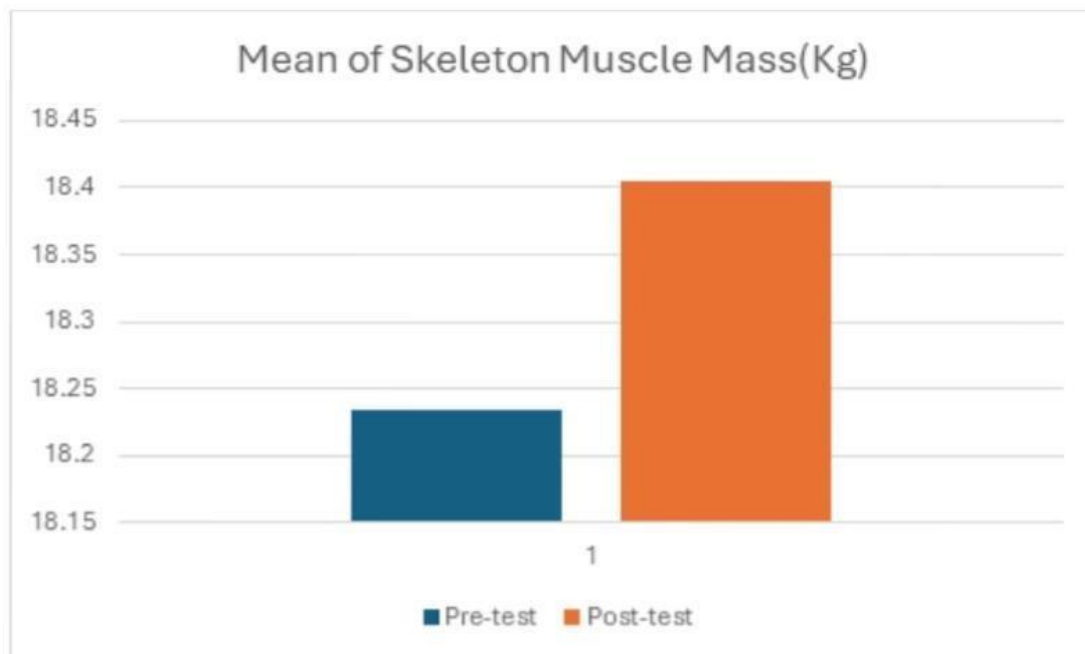


FIG NO.1

GRAPHICAL REPRESENTATION (MEAN) OF SKELETAL MUSCLE MASS (KG) OF PRETEST AND POST- TEST

• Discussion of the study

- **The p-value obtained for skeletal muscle mass by t-test is 0.0023433025 which is lesser than the t-value** under the level of significance which was taken earlier. The mean of both groups is 18.23484 and 18.40422743 and standard deviation is 2.619425 and 2.657252. Therefore, result is said to be statistically significant.
- **The p-value obtained for body fat mass by t-test is 0.171678486 which is lesser than the t-value** under the level of significance which was taken earlier. The mean of both groups is 15.55579 and 15.87956301 and standard deviation is 4.262661 and 3.829438. Therefore, result is said to be statistically significant.
- **The p-value obtained for body mass index by t-test is 0.448672807 which is lesser than the t-value** under the level of

significance which was taken earlier. The mean of both groups is 20.2557 and 20.29437365 and standard deviation is 2.463035 and 2.249664. Therefore, result is said to be statistically significant.

- **The t-value obtained for PBF by t-test is 0.02129331 which is lesser than the t-value** under the level of significance which was taken earlier. The mean of both groups is 31.02565 and 28.97314883 and standard deviation is 4.238973 and 3.33469. Therefore, result is said to be statistically significant.
- **The t-value obtained for Total Body Water by t-test is 0.002817006 which is lesser than the t-value** under the level of significance which was taken earlier. The mean of both groups is 25.19425 and 27.11893757 and standard deviation is 3.177506 and 2.978234. Therefore, result is said to be statistically significant.

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