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Effect on one month yoga training on BMI and flexibility of college girls

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Abstract

A Regular Yoga practice is biennial in every state of life. Asanas and Pranayama should be practice regularly for the proper fitness of body and mind. Despite a growing body of research studies and some systematic reviews on the effects of yoga, there is still a lack of solid evidence regarding its relevance. Hence, a study with the objective to study the effect of one month yoga training on BMI and flexibility of college going girls was conducted. Total fifty (50) college girls; age ranging 18 to 21 years agreeing to do one month basic yoga training were randomly selected. They were given training of various asanas and Pranayam for total one month, six days a week and an hour a day. Height, weight, Body Mass Index (BMI) and flexibility of the girls were taken as the variables. From the findings of the study it was concluded that Yoga helps to loose weight and thereby reduce the overall BMI; increases flexibility and with long term of yoga practice more beneficial effects can be seen.

Keywords: Yoga BMI flexibility

Introduction

Yoga, a union of one's personal consciousness with the cosmic, is a spiritual way of life, practiced by many over millennium^[4]. The conceptual background of yoga has its origins in ancient Indian philosophy. There are numerous modern schools or types of yoga (i.e., Iyengar, Viniyoga, Sivananda, etc.), each having its own distinct emphasis regarding the relative content of physical postures and exercises (asanas), breathing techniques (pranayama), deep relaxation, and meditation practices that cultivate awareness and ultimately more profound states of consciousness^[3].

A Regular Yoga practice is beneficial in every state of life. Asanas and Pranayama should be practice regularly for the proper fitness of body and mind. People having less flexibility in bodies can do Yoga exercise regularly and they can start with some basic Asanas. Researchers and practitioners have observed many benefits of yoga on the physical and mental health^[1]. Yoga is also beneficial for musculoskeletal functioning, cardiovascular health, diabetes, respiratory disorders, hypertension, hypotension, depression, and many other disorders. In essence, yoga is a process of creating a body and mind that are stepping stone not hurdles, to an exuberant and fulfilling life. A typical yoga program, usually consisting of Asana, Pranayama, Kriya, deep relaxation, and meditation, has a combined effect of relaxation of body, slowing of breath, and calming of mind.

The application of yoga as a therapeutic intervention, which began early in the twentieth century, takes advantage of the various psychophysiological benefits of the component practices. The physical exercises (Asanas) may increase one's physical flexibility, coordination, and strength, while the breathing practices and meditation may calm and focus the mind to develop greater awareness and diminish anxiety^[1], and thus result in higher quality of life. Other beneficial effects might involve a reduction of distress, blood pressure, and improvements in resilience, mood, and metabolic regulation^[2].

Khalsa stated that a majority of the research on yoga as a therapeutic intervention was conducted in India and a significant fraction of these were published in Indian journals, some of which are difficult to acquire for Western clinicians and researchers^[16].

Despite a growing body of research studies and some systematic reviews on the effects of yoga, there is still a lack of solid evidence regarding its relevance. For many specific indications and conditions, there is inconsistent evidence with several studies reporting

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positive effects of the yoga interventions, but other studies are less conclusive. In some instances, these discrepancies may result from differences between the study populations (e.g., age, gender, and health status), the details of the yoga interventions, and follow-up rates. Considering this a study with the objective to study the effect of one month yoga training on BMI and flexibility of college going girls was conducted.

Methodology

Total fifty (50) college girls; age ranging 18 to 21 years consenting to do one month basic yoga training were randomly selected. They were given training of various asanas and pranayam for total one month, six days a week and an hour a day. They practiced following asanas and pranayams: Suryanamaskar, Tadasana, Padahastana, Veerabhadrasana, Garudasana, Padmasana, Vajrasana, Gomukhasana, Ustrasana, Paschimottanasana, Vakrasana, Bhadrasana, Shavasana, Sarvangasana, Halasana, Setubandhasana, Chakrasana, Markatasana, Uttanpadasana, Pawanmuktasana, Makarasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana, Vrikshasana, Natarajasana, Ashvasthasana, Utkatasana Bhastrika pranayam, Anulom Vilom pranayam, Nadi Shodhan pranayam and Bhramari pranayam.

Girl’s daily routine activities were not under the control of the researchers. Hence it considered as the limitation of the study.

Height, weight, Body Mass Index (BMI) and flexibility of the girls were taken as the variables. Following is the table demonstrating units of measurements and instruments used/ tests administered to collect the data

Table 1: Measurements and instruments used

S. No.	Variable	Units of Measurement	Instruments/ Test Used
1	Height	meters	Anthropometric Rod
2	Weight	Kg	Electronic Weighing Scale
3	BMI	Kg/mt ²	-----
4	Flexibility	inches	Seat and reach trunk flexibility box

Height of the subjects was measured using anthropometric rod and an electronic weighing scale was used to measure weight of the subject. BMI was calculated using the formula:

$$BMI = \frac{\text{Weight (KG)}}{\text{Height}^2 \text{ (meters)}}$$

Seat and Reach Test was administered to measure the flexibility of the subjects. This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level, not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position for at one-two seconds while the distance is recorded. Jerky movements are avoided. The score is recorded to the nearest centimeter or half inch as the distance reached by the hand.

The pre training and post training data were collected. The collected data were subjected to mean, standard deviation and ‘t’ test calculations. The chosen level of significance was 0.05.

Analysis of Data

Table 2: Descriptive Statistics of Weight Measured Pre Training and Post Training

	Pre-Training	Post Training	‘t’ Values
Mean	53.44	53.34	0.04953
Standard Deviation	7.96	7.95	
Minimum Score	39.6	39.2	
Maximum Score	71.1	71	

*Sample Size N= 34

** significant at 0.05 level

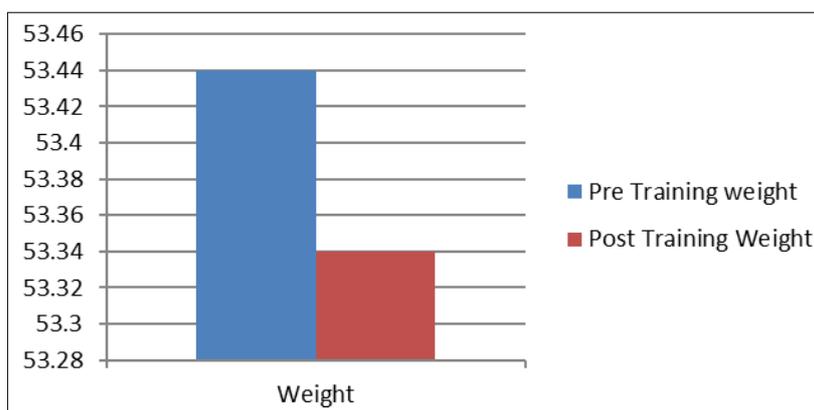


Fig 1: Graphical Representations of Pre Training and Post Training Weights

Table 3: Descriptive Statistics of Height Measured Pre Training and Post Training

	Pre Training	Post Training	‘t’ Values
Mean	1.58	1.59	0.01271
Standard Deviation	0.78	0.79	
Minimum Score	1.25	1.26	
Maximum Score	1.75	1.75	

*Sample Size N= 34

** significant at 0.05 level

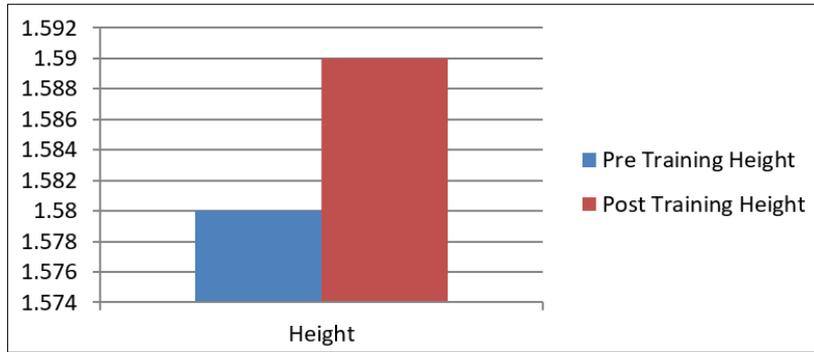


Fig 2: Graphical Representations of Pre Training and Post Training Height

Table 4: Descriptive Statistics of BMI Calculated Pre Training and Post Training

	Pre Training	Post Training	't' Values
Mean	21.27	21.23	0.05704
Standard Deviation	3.41	3.34	
Minimum Score	15.9	14.94	
Maximum Score	31.87	31.19	

*Sample Size N= 34

** significant at 0.05 level

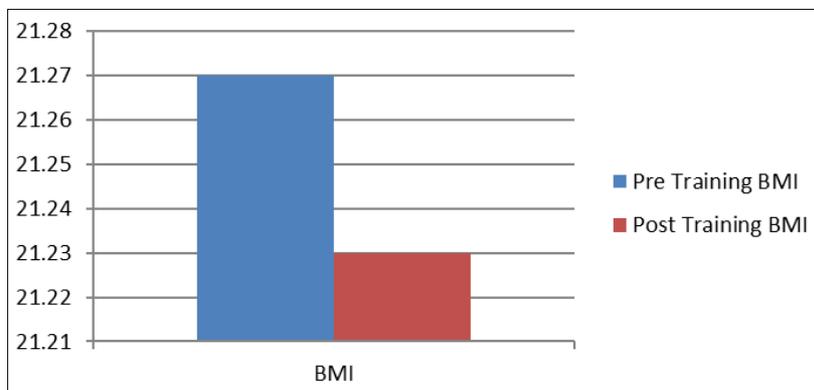


Fig 3: Graphical Representations of Pre Training and Post Training BMI

Table 5: Descriptive Statistics of Flexibility Measured Pre Training and Post Training

	Pre Training	Post Training	't' Values
Mean	14.78	15.74	1.623
Standard Deviation	2.47	2.38	
Minimum Score	11	11.5	
Maximum Score	20.5	22	

*Sample Size N= 34

** significant at 0.05 level

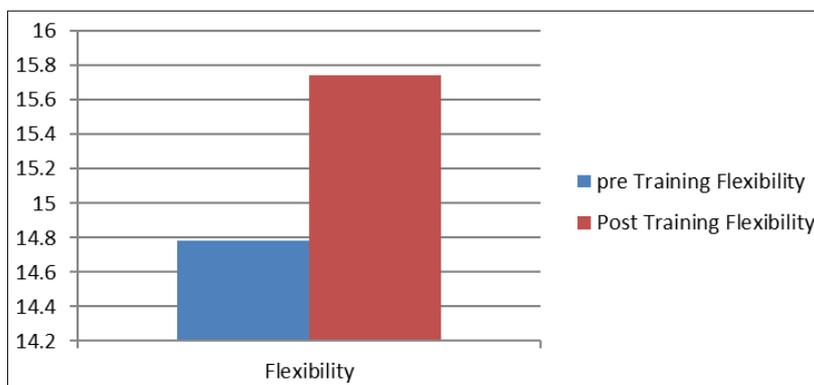


Fig 4: Graphical Representations of Pre Training and Post Training Flexibility

Findings of the Study

1. From the findings of the study it is evident that there was a slight reduction in the mean weight of the subject following the yoga training. However the 't' value showed no significant difference.
2. From the findings of the study it is evident that height of the subject remained unchanged following the yoga training and the 't' value also showed no significant difference.
3. From the findings of the study it is evident that there was a slight reduction in the mean BMI of the subject following the yoga training. However the 't' value showed no significant difference.
4. From the findings of the study it is evident that there was a slight increase in the mean flexibility of the subject following the yoga training. However the 't' value showed no significant difference.

Conclusions

From the findings of the study it may be concluded that:

1. Yoga helps to lose weight and thereby reduce the overall BMI.
2. Yoga increases flexibility.
3. With long period of yoga practice more beneficial effects can be seen.

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