

Effect of Six Months Surya Namaskar and Selected Asanas on Body Composition Variables of Under Graduate Female Students of Jangalmahal

^aBinod Chowdhary, ^bBadshah Ghosh,

^aSeva Bharati Mahavidyalaya, Kapgari, West Medinipur, India.

^bPanskura Banamali College, Panskura East Medinipur, India.

Abstract

Introduction: Yoga is designed to stretch and tone the muscles and to keep the spine and joints flexible. Some suggest that the bending, twisting and stretching movements also massage the internal organs and glands. Yoga poses are generally done with deep, diaphragmatic breathing that is thought to increase oxygen flow to the brain.

Aim: The purpose of the study was to determine the effect six months Surya Namaskar and selected asanas on body composition variables of under graduate female students of Jangalmahal.

Subjects and methods: Thirty female students of B.A/B.Sc courses were randomly selected from Seva Bharati Mahavidyalaya, Kapgari as subjects of the study. The selected subjects were divided into two equal groups (Experimental group and Control group). Their age ranged from 17 to 25 yrs. Suryanamaskar techniques and asanas were properly introduced with demonstration to the subjects before the practice began. The duration of the practice was 30 minutes with two sessions in a day i.e. morning and evening session for a period of six months. BMI, Body fat% and lean body mass were measured with the help of shin fold caliper. Pre and post test were conducted in order to identify the significant difference.

Results: To find out the significance difference between the pre and post data of each group paired 't' test was applied. The result showed that six months Surya namaskar and asanas practice reduces BMI, Body fat% and insignificant difference was found in LBM of the subjects.

Conclusion: The result of the present study shows that there is a significant change in BMI and Body Fat % and insignificant difference in LBM of under graduate students of jangalmahal.

KEYWORDS: Suryanamaskar, Asanas, BMI, Fat%, LBM etc.

Introduction: Yoga is a form of exercise based on the belief that the body and breath are intimately connected with the mind. By controlling the breath and holding the body in steady poses, or asanas, yoga creates harmony. Yoga is a means of balancing and harmonizing the body, mind and emotions and is a tool that allows us to withdraw from the chaos of the world and find a quiet space within. To achieve this, yoga uses movement, breath, posture, relaxation and meditation in order to establish a healthy, vibrant and balanced approach to living. Yoga exercises are designed to ease tense muscles, to tone up the internal organs, and to improve the flexibility of the body's joints and ligaments. The aim of proper yoga exercise is to improve suppleness and strength. Each posture is performed slowly in fluid movements. Violent movements are avoided.

Suryanamaskar or sun salutation is simple, yogic exercises that provide immerse

health benefits. Surya Namaskar is a worship of worshipping surya, has been practiced in India for thousands of years. Suryanamaskar is a branch of yoga that concentrates physical health and mental well-being. Through practicing various body postures (asana), breathing techniques (Pranayama), and meditation. It is believed that one can obtain a sound physical body as well as a calm and peaceful mind. Suryanamaskar is a series of 12 physical postures made up of a variety of forward and backward bends. The series of movements stretch the spinal column and upper and lower body through their full range of motion, massaging, toning and stimulating vital organs by alternately flexing the body forwards and backwards. It builds upper body strength through the inherent weight bearing positions, especially in the arms and shoulders, throughout the series. The simulated push-up movement and upper body weight bearing positions in the series may help to develop muscular strength and endurance in the pectoral, triceps, as well as the muscles of the trunk. The series gives such a profound stretch to the body that it is considered to be a complete yoga practice by itself.

Asanas are the static posture accredited with values of promoting physical fitness. Element of exertion with characteristics other physical exercises is eliminated in the system of asanas. Asanas have been classified into meditative and cultural poses. The aim of cultural poses is to produce a state of physiological balance in the human body so that it can possess the best organic vigour. Yogic Asanas help in the prevention and cure of many physical diseases, especially those of the digestive tract by regulating the secretion of various duct and ductless gland. Apart from all these yoga is an extremely economic practice.

The studies reviewed illustrate that there are many physical, physiological, and psychological benefits to participating yoga and yoga related mind- body interventions. Regular practice of yoga techniques have been shown to lower BMI, heart rate and blood pressure in various populations. The purpose of the study was to determine the effect of six months Surya Namaskar and selected asanas on body composition of under graduate students of Jangalmahal. It was hypothesized that six month Suryanamaskar and selected asanas will significantly decrease BMI, Lean body mass and body fat %.

Objectives of the study:

To study the effect of six months Suryanamaskar and selected asanas on body composition Variables of under graduate female students of Jangalmahal.

Methodology:

Thirty female students of B.A/B.Sc were randomly selected from Seva Bharati Mahavidyalaya, Kapgari as subjects of the study. The selected subjects were divided into two equal groups (Experimental group and control group). Their age ranged from 17 to 25 yrs.

At the pre session, the subject's weight, height, BMI, LBM and body fat % were measured with the help of skin fold calipers. After the pre-test, the experimental group

was given one hour session of instructions to learn the basic postures of the Suryanamaskar and selected asanas. After the initial instruction period, the group was instructed to perform the routine two times daily for 30 minutes followed by a 1 minute rest period of lying on their backs in Shavasana position after each asanas. Subjects were instructed to take their natural breath without any interruption. The subjects were directed to perform Suryanamaskar and asanas daily, once in the morning and once in the evening. Each routine consisted of six rounds of practice followed by a series of asanas having 1 minute rest period in between two asanas (where they were to lie still in a supine position (Shavasana) and to follow their natural breath). The entire yoga practice took approximately 30 minutes to complete. Asanas were selected on the basis of their benefits for the abdominal, hips, thigh, waist, and upper body.

Practice Schedule-

Weeks/Time	Duration	Events	Frequency	Rest
First two months- Morning-06:30-07:15, Evening 04:30-05:15	30- 45 mints.	12 count Suryanamaskar and asanas- Padmasanas,vajrasana, Pawanmukta, Halasana, Karanpida, Salavasana, Matysasana. Danurasana.	4 set of Suryanamaskar. 2 sets of each asanas.	1 mints in between Asana
Second two months Morning-06:30-07:15, Evening 04:30-05:15	40-50 Mints.	12 count Suryanamaskar and asanas- Padmasanas,vajrasana, Pawanmukta, Halasana, Karanpida, Salavasana, Matysasana. Danurasana, Bujangasana, Sethubandasana, Vipiritkarni, Akarnadanurasana.	6 set of Suryanamaskar. 2 sets of asanas.	1 mints in between Asana
Last two months Morning-06:30-07:15, Evening 04:30-05:15	50-60 mints.	12 count Suryanamaskar and asanas- Padmasanas,vajrasana, Pawanmukta, Halasana, Karanpida, Salavasana, Matysasana. Danurasana, Bujangasana, Sethubandasana, Vipiritkarni, Akarnadanurasana, Paxhimottanasana, Tadasana, Hastapadasana, Chakrasana, suptavajrasana, Gomukasana, Naukasana, Ardhamatysendra asana.	6 set of Suryanamaskar. 2 sets of asanas.	1 mints in between Asana

Analysis of data:

The data was collected twice i.e. prior to the start of the practice programme (Pre data)

after the completion of six months practice program (post data). The data collected during the study was statistically analyzed by employing the ‘t’ test at 0.05 level of significance.

Result:

Mean and standard deviation of under graduate of jangalmahal students.

TABLE- NO-1

Variables	Mean	St.Dvt.
Height (In Cms)	154.31	7.25
Body weight (In Kg)	Pre- 58.48	4.56
	Post- 55.64	5.01

Table no-1 shows the value of mean and standard deviation of height 154.31 and 7.25 respectively and mean and standard deviation of body weight in pre and post test condition are 58.48 ± 4.56 and 55.64 ± 5.01 respectively in under graduate female students of Jangalmahal.

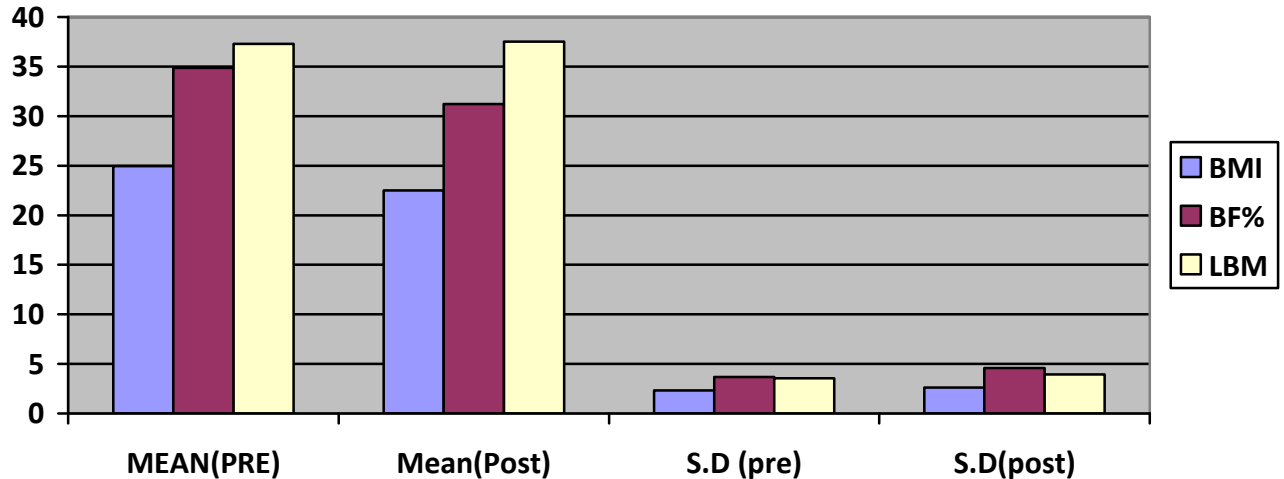
Difference in Mean and Standard Deviation of Body Composition Variables of Experimental Group of Under Graduate Female Students of Jangalmahal

TABLE NO-2

Variables	Pre-test Mean	Standard Deviation	Post-test Mean	Standard Deviation	Mean Difference	‘t’ Value
BMI	24.96	2.32	22.51	2.63	2.45	2.897*
Body Fat %	34.88	3.69	31.23	4.57	3.65	4.147*
LB Mass	37.28	3.54	37.50	3.95	0.22	0.176

It is evident from the table no-2 that mean and standard deviation of BMI, Body fat % and LBM Of under graduate students are 24.96 ± 2.32 (pre), 22.51 ± 2.63 (Post), 34.88 ± 3.69 (pre), 31.23 ± 4.57 (post) , 37.28 ± 3.69 (pre), 37.50 ± 3.95 (Post) respectively and the calculated ‘t’ value for BMI and Body fat % are 2.897 & 4.147 which is greater than the tabulated ‘t’ value i.e.1.74. Therefore, it is concluded that there is significant difference in BMI and Body fat % after the six month practice of Suryanamaskar and asanas. Whereas the ‘t’ value for lean body mass is lesser than the value of tabulated ‘t’ value i.e. 1.74. Therefore, it is concluded that there is insignificant difference in lean body mass after the six month practice of Suryanamaskar and asanas.

Figure show the mean and standard deviation value of experimental groups.



Difference in Mean and Standard Deviation of Body Composition of Control Group of under graduate Female Students of Jangalmahal

TABLE NO-3

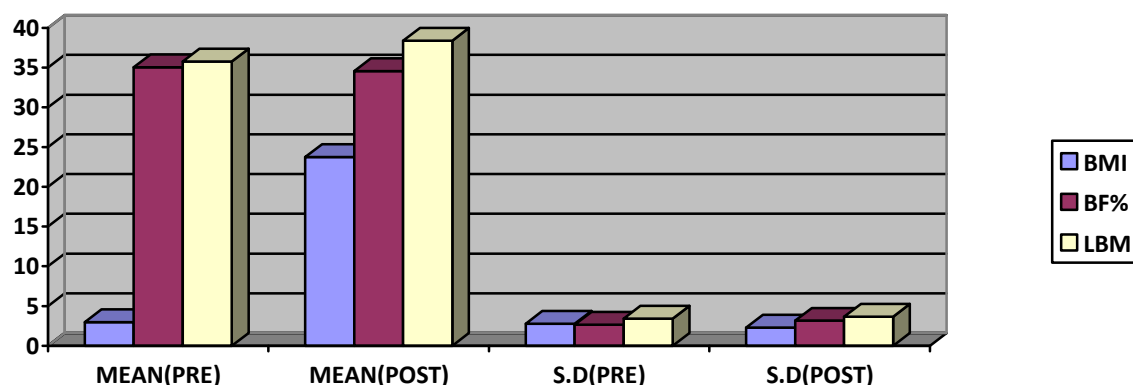
Variables	Pre-test Mean	Standard Deviation	Post-test Mean	Standard Deviation	Mean Difference	't' Value
BMI	23.98	2.77	23.74	2.31	0.24	0.848
Body Fat %	35.06	2.65	34.56	3.16	0.50	0.255
LB Mass	35.76	3.42	38.39	3.67	2.63	2.228*

It is evident from the table no-3 that insignificant difference was found between the mean Scores

of control groups (pre& post test) in relation to impact of Suryanamaskar and selected asanas on BMI & body fat % in under graduate female students, as the t- value was found 0.848 & 0.225 which was lower than the required value 1.74 at 0.05 level of significance. Therefore, it is concluded that there is a insignificant difference in the BMI & body fat % after the six month practice of Suryanamaskar and asanas. Where as it is also reveal that there is significant difference in lean body mass of the female under graduate students. As the calculated value of 't' was found 2.228 at 0.05 level of significance, which is higher than the tabulated 't' value i.e. 1.74 at 0.05 level of

significance. Therefore it is concluded that there is significant difference in lean body mass after the six month practice of Suryanamaskar and asanas.

Figure show the mean and standard deviation value of control groups.



Discussion and Conclusion:

The aim of the study was to investigate the effect of six month Suryanamaskar and selected asanas on body composition variables of under graduate students of jangalmahal. The finding of the study indicates that Suryanamaskar and asanas has significant effect on BMI and body fat % of the subjects. On the other hand the practice has no significant effect on the lean body mass. The possible reason for this may perhaps be the loss of fat mass was responsible for relative weight gain of muscle mass. Decrease body and changed body mass of the subject suggested that their lean body mass has been increased following practice. This would be one of the reason that led to improved glycemic control of the exercise groups, as skeletal muscles represents the largest mass of insulin- sensitive tissue(Maiorana et al., 2002).

References:

1. Dipak, Ch.and Rajendra, "Effect of Suryanamaskar on Flexibility and Fat Percentage of Pre-Service Teacher." Proceeding of International Conference on Yoga and Physical Education, Sir Parashurambhau College, Pune, India. (2011); P.13.
2. Kristine M., "The Effect of Suryanamaskar Yoga Practice on resting heart rate and blood Pressure, Flexibility, Upper Body Muscle Endurance, and Perceived Well-Being in Healthy Adults." Master of Education at the Cleveland State University, (2008).
3. Mc Caffrey, et.al. "The Effect of Yoga for Hypertensive Persons in Thailand." Holistic Nurse Practitioner, 19 (2005); 175-180.
4. Sivansankaran,S. et.al."The Effect of a Six-Week Program of Yoga and Meditation on Brachial Artery Reactivity; do Psychosocial Interventions affect Vascular Tone

“Clinical Cardiology, 29(2006); 393-8.

5. Razmi,V, Soleimani, Farrokh, M and Kangane, Sapan E. “ The Effect of Suryanamaskar on Flexibility, Body mass Index, Resting Heart Rate, Systolic and Diastolic Blood Pressure and Perceive Well-being in Iranian Male Kick Boxers.” Proceeding of International Conference on Physical Activities and Sports for Global Peace and Development, Sports and Spiritual Science Publications, New Delhi, India.(2011) 290-294.
6. M.L, Gharte, (1978), “Effect of yoga training on physical fitness”, Yoga Mimamsa, Journal of the International Association of Yoga Therapists.
- 7.