



ASSESSMENT OF THE EFFICACY OF SURYA NAMASKAR IN MANAGEMENT OF STHAULYA

Dr. Sarvesh Kumar Yadav¹, Dr. Kirti R. Bhati^{2*} and Dr. Lokesh Singh Bhati³

¹P.G. Scholar, ²Associate Professor, ³P.G. Scholar,

Bharati Vidyapeeth Deemed University -College of Ayurved, Pune, Maharashtra, India.

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Corresponding Author

Dr. Kirti R. Bhati

Associate Professor, Bharati
Vidyapeeth Deemed
University -College of
Ayurved, Pune,
Maharashtra, India.

ABSTRACT

Suryanamaskar (Sun salutation) is combination of Asanas. Its root is found in yoga philosophy of vedic traditions. The dynamic series known as Suryanasmaskar (Sun salutation) is the best way to burn the calories and reduce weight. Suryanamaskar is full Yoga by itself. It tones up the whole body & has a unique influence on endocrine, circulatory, respiratory, digestive and nervous system, helping to correct metabolic imbalances that cause and perpetuate obesity. Practiced daily, it will help you in reducing weight but will bring flexibility to your spine and joints. It will rejuvenate you & bring in beauty and longevity. It is best done while the stomach is empty. In recent times, medical fraternity is attracted towards yoga.

Suryanamaskar is a part of yogic practices and is believed to be an all-round exercise. The present study tested efficacy of of Suryanamaskar in Sthaulya''. The study was conducted on 150 subjects. After 45 days follow up the effect of Suryanamaskar were assessed statistically based on the performa prepared. It was observed that 45 days of Suryanamaskar practice decreases Sthaulya. In this study we found that Suryanamaskar was effective in Sthaulya.

KEYWORDS: Sthaulya ,Suryanamaskar, Obesity.

INTRODUCTION

Sthaulya (obesity) is one of the major metabolic disorder of modern era. In modern era with continuous changing lifestyle & environment, changing diet habits, man has become the victim of many diseases caused by unwholesome dietary habits & obesity is one of them. In today's fast growing world of globalization where health is a major issue, Ayurveda offers

appropriate knowledge of every disease, right from its causes to ill-effects and acknowledges to the fact of prevention of its causes to treatment of each of them.

According to Ayurveda, Sthaulya is defined as a condition in which there is an accumulation of excessive amount of meda in sphik, stana and udarapradesha, which can be co-related to obesity. Sthaulya is widely regarded as a pandemic with potential consequences for human health. Obesity is basically a lifestyle disorder. As BMI increases, the life longevity/expectancy decreases. It is one of the most common nutritional disorders. Obesity is root cause of many diseases like DM, HTN etc.

In Ayurveda, Sthaulya is referred as “Medoroga” which is primarily caused by malfunctioning of meda-dhatwagni and is included in ‘Astau-nindit-purusha’ by Acharya Charaka meaning who are been criticized by the society due to their inappropriate body parameters. It also counted as one amongst the ‘Kapha-Nanatmaja Vikaras’ and is Santarpanajanya Vyadhi.

Commonly obesity is due to excessive eating and lack of adequate exercise. Acharya Charaka has quoted a Sthaulya under the eight varieties of impediments which designated as Astha-Nindita Purusha, Ati-Sthaulya comprises one of them (Ch. Su. 21/2). Acharya Charaka also lists this problem under Samtarpanajanya Vyadhi (Ch. Su. 23). He listed eight defects underlying- Sthaulya Purusha, Ayuhrasa, Javoprodha, Alpa-vyavayita, Daurbalya, Daurgandhya, Swedabadha, Ati-trisha, Ati-kshudha (Ch. Su. 21/3).

Need of Study

Asana is the first step of Hathayoga. One should practice Asanas for keeping the body steady. One should practice Asanas, Pranayama, Mantras consisting of 12 Asanas, which includes various types of posture like forward and backward bending etc. known as ‘Suryanamaskar’. It is one of the best practices for combating obesity. It helps in maintaining as well as constituting body.

AIM: Assessment of the Efficacy of Suryanamaskar in Management of Sthaulya.

OBJECTIVES

- To study Suryanamaskar is beneficial in improving muscle strength, general body endurance and body composition.
- To study Suryanamaskar is beneficial in prevention and management of Sthaulya.

- To study Sthaulyajany aaharvihar and modifications suggestive to prevent and manage Sthaulya.

HYPOTHESIS

H₀: Suryanamaskar is not effective on Sthaulya.

H₁: Suryanamaskar is significantly effective on Sthaulya.

MATERIALS AND METHODS

Selection of Cases: The study recruited a population of 150 clinically diagnosed patients of Sthaulya selected from O.P.D. unit of. Department of Swasthavritta Bharati Medical Foundation's Ayurved Hospital Pune, Maharashtra, India. A regular record of the assessment of all patients was maintained according to form prepared for the purpose. Following inclusion and exclusion criteria were used for registration of the patients for present clinical trial. Ethical clearance from ethical committee was taken regarding synopsis from BVDU.

Inclusion criteria

- Age between 20 yrs to 50 yrs.
- Patients were included irrespective of sex and economical status.
- Diagnosed cases of Sthaulya were included.
- Standard height and weight chart, BMI were considered. BMI exceeded than 30% were included.
- Patients were selected according to manasprakriti questionnaires.

Exclusion criteria

- Age below 20 yrs and above 50 yrs.
- Pregnant women were excluded.
- Patient with severe illness.
- Patient suffering from any other systemic disorder were excluded.
- Patient with secondary causes of Sthaulya were excluded.
- Those having a history of active sports training, yoga practice were excluded.

STANDARD OPERATIVE PROCEDURE(SOP)**SURYA NAMASKAR**

Step 1. Pranamasan (Normal Breathing) Hands together in Namaskar position Forearms parallel to the ground feet together. Body weight evenly distributed over both feet. Calves quads and hamstrings tightened. Abdominal Muscles tightened.

Step 2. Urdhvasan (Inhale) Palms joined and pushed up and back. Biceps touching ears. Maintain sight on wrists. Leg and Abdominal muscles remain tight.

Step 3. Uttanasan (Exhale) Keep arms straight keep back straight and wrists. Try to put palms flat on ground. Try to touch forehead to knees Do not bend the knees.

Step 4. Eka Pad Prasaranasan (Inhale) Thrust one leg back. keep other foot in line with hands. Try to arch and look backwards.

Step 5. ChaturangDandasan (Exhale) lift knee off ground Thrust second leg backwards. Keep feet together and knees together. Maintain straight & inclined line throughout body. Keep sight on ground at right angle.

Step 6. SashtangPranipatasan (Hold Breath) Lower entire body to the ground slowly. Only forehead chest, knees and toes touch ground. Keep hands and elbows close to the body. Keep feet together and knees together.

Step 7. UrdhvamukhShwanasan (Inhale) From previous asana push body forwards and upwards. Keep feet together and knees together. Tighten forearms, biceps and triceps. Tighten abdominal muscles. Arch back and look backwards

Step 8. AdhomukhShwanasan (Exhale)Keep lower body straight. Keep upper body straight. Create the mountain shape. Keep feet together and knees together. Try to keep feet flat on the ground. Tuck head in between arms. Push chin towards the chest.

Step 9. Eka Pad Prasaranasan (Inhale)Form previous asana thrust one leg forward. Keep forward foot in line with hands. Try to arch and look backwards.

Step 10: Uttanasan (Exhale)keep arms straight keep back straight and wrists. Try to put palms flat on ground. Try to touch forehead to knees. Do not bend the knees.

Step 11: Pranamasan (Normal Breathing)Hands together in namaskar position. Forearms parallel to the ground Feet together. Body weight evenly distributed over both feet. Calves, quads and hamstrings tightened. Abdominal muscles tightened. To maintain the records subjects were followed by message or call.

Case control form was specially prepared for observation and follow ups of the subjects at 7 days interval for 45 days. Follow up was done periodically for total duration of 30 Days on 7th, 14th, 21st, 30th day and Post Treatment follow-up on 45th day was taken.

Criteria for assessment

The following criteria were used to evaluate improvement.

Subjective parameters

Relevance of symptoms were graded as.

Kshudra Shwas

Dyspnoea after heavy works but relieved soon & up to tolerance	0
Dyspnoea after moderate works but relieved late & up to tolerance	1
Dyspnoea after little works but relieved soon & up to tolerance	2
Dyspnoea after little works but relieved soon & up beyond tolerance	3
Dyspnoea in resting condition	4

Thrishna

Normal thirst (up to 2 litres).	0
Up to 1 litres Excess intake of water.	1
1 to 2 litres excess intake of water.	2
2 to 3 litres excess intake of water.	3
More than 3 litres intake of water.	4

AlpaVyavaya

Unimpaired libido & sexual performance.	0
Decrease in libido but can perform sexual act.	1
Decrease in libido but can perform sexual act with difficulty.	2
Loss of libido & cannot perform sexual act	3

Nidradhikya

Normal sleeps 6-7 hrs./day.	0
Sleep up to 8 hrs./day with Anga Gaurav.	1
Sleep up to 8 hrs./day with Anga Gaurav & Jrumbha.	2
Sleep up to 10hrs./day with Tandra.	3
Sleep up to 10 hrs./day with Tandra and Klama.	4

Swed Daurgandhya

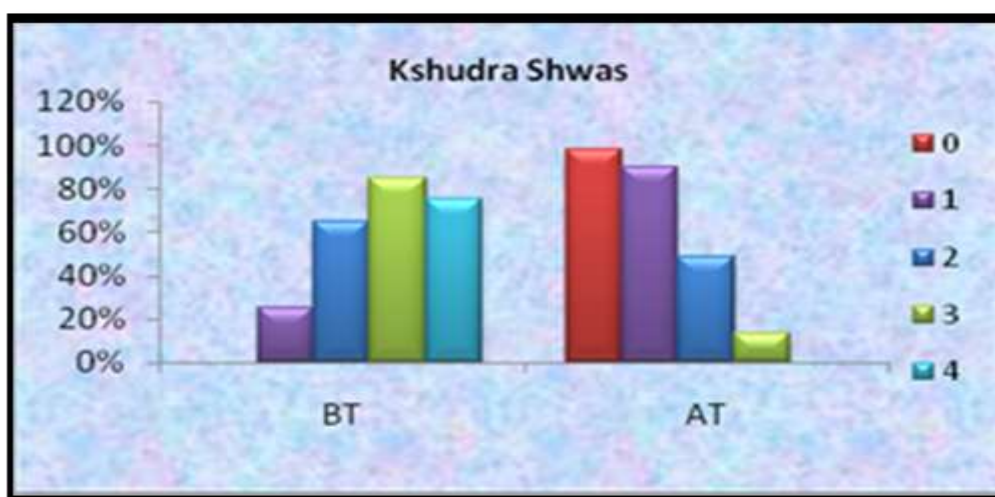
Absence of foul smell	0
Occasionally foul smell limited to close areas difficult to suppress with deodorant	1
Persistent foul f-elt from long distance is not suppressed by deodorants	2
Persistent foul smell felt from long distance even intolerable to the patient himself	3

Objective parameters

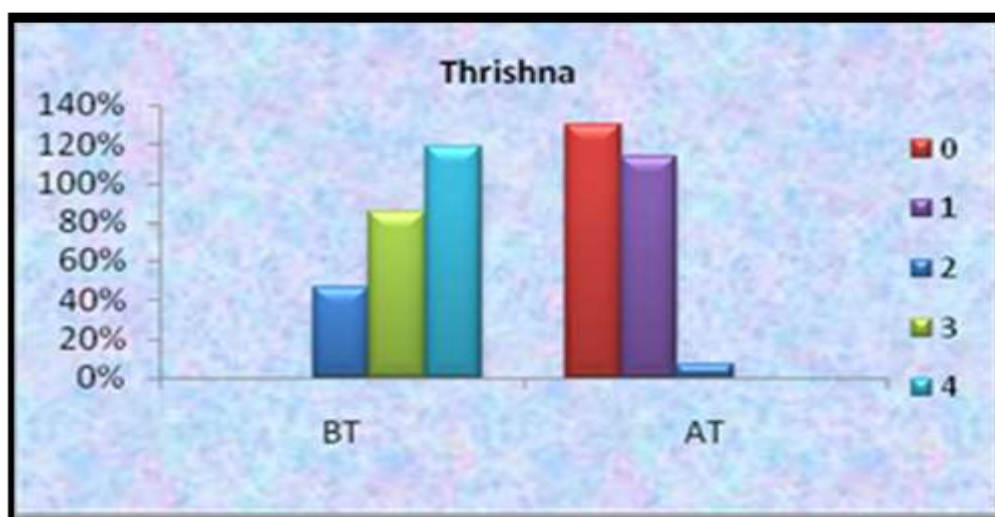
- B.M.I
- Vakshaparinaha(chest circumference)
- Udaraparinaha(abdominal circumference)
- Sphikparinaha (buttocks circumference)

OBSERVATIONS&RESULTS

In the present study 150 patients were studied. After completion of the clinical study, observations in Sthaulya. were recorded in the form of charts and tables. Observations related to – Age, sex, diet, size, sankhya, prakriti were recorded as follows. It was observed that 27% of patients were from the age group of 25- 30yrs of age. Majority of male patients were registered for study i.e. 82(55%) and female patients were 68 (45%). In the present study it was observed that 48 (32%) were of vata pitta prakruti, 59 (39%) were of pitta kapha prakruti, 43 (29%) were of pitta vata prakruti,. Out of 150patients 86 (57 %) were of mixed diet group and 64patients (43%) were of vegetarian diet group. So maximumnumbers of patients are from “mixed diet” group.



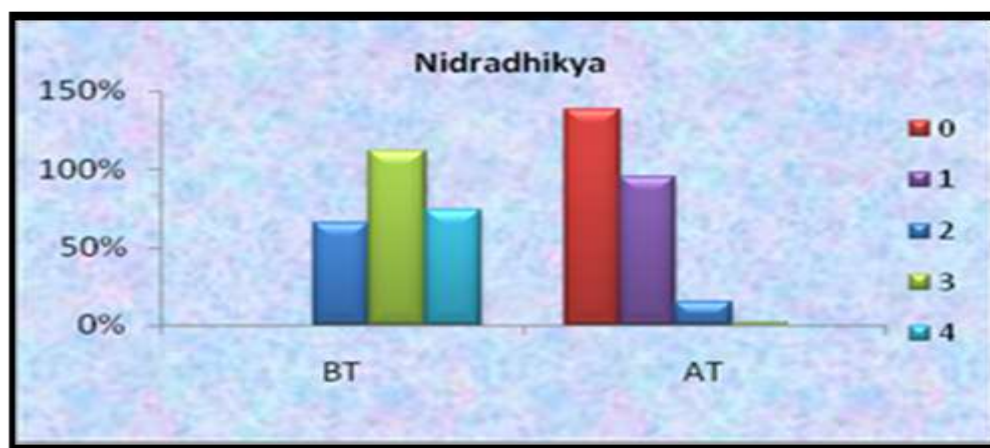
Graph 1: Results of Patients Improved According to Kshudra Shwas Lakshan.



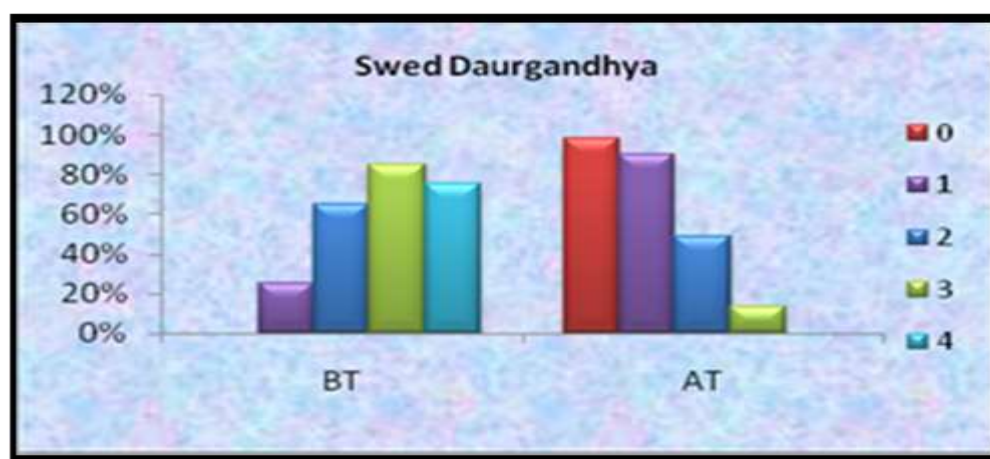
Graph 2: Results of Patients Improved According to Trishnalakshan.



Graph 3: Results of Patients Improved According to Alpavyavayalakshan.



Graph 4: Results of Patients Improved According to Nidradhikyalakshan.



Graph 5: Results of Patients Improved According to Swed Daurgandhyalakshan.

DISCUSSION

Using Wilcoxon Sign Rank Test comparison of two dependent samples was done with the following results.

- Kshudra Shwas.**

Parameter	N	Mean		Std Deviation		Positive rank	Negative rank	Tie	Z value	P value	Interpretation
		BT	AT	BT	AT						
Kshudra Shwas	150	2.39	0.79	0.47	0.73	0	140	10	-4.39	0.00	S

- Trishna.**

Parameter	N	Mean		Std Deviation		Positive rank	Negative rank	Tie	Z value	P value	Interpretation
		BT	AT	BT	AT						
Trishna	150	1.93	1.00	0.78	0.74	0	139	11	-5.11	0.00	S

- AlpaVyavaya

Parameter	N	Mean		Std		Positive rank	Negative rank	Tie	Z value	P value	Interpretation
				Deviation							
		BT	AT	BT	AT						
Alpa Vyavaya	150	2.00	0.93	0.74	0.69	0	150	0	-5.32	0.00	S

- Nidradhikya

Parameter	N	Mean		Std		Positive rank	Negative rank	Tie	Z value	P value	Interpretation
				Deviation							
		BT	AT	BT	AT						
Nidradhikya	150	1.53	0.67	1.17	0.71	0	134	16	-4.40	0.00	S

- Swed Daurgandhya

Parameter	N	Mean		Std		Positive rank	Negative rank	Tie	Z value	P value	Interpretation
				Deviation							
		BT	AT	BT	AT						
Swed Daurgandhya	150	2.10	0.80	0.40	0.71	0	150	0	-4.10	0.00	S

The effect of Surya namaskar was good on B.M.I ,Vakshaparinaha(chest circumference), Udaraparinaha(abdominal circumference) , Sphikparinaha (buttocks circumference).

- B.M.I.

Parameter	N	Mean		SD		Z value	p value
		BT	AT	BT	AT		
BMI	150	29.67	29.01	3.02	2.96	4.98	0.0006

- Vakshaparinaha(chest circumference).

Parameter	N	Mean		SD		Z value	p value
		BT	AT	BT	AT		
chest circumference	150	102.71	102.7	6.35	5.97	4.63	0.048

- Udaraparinaha(abdominal circumference).

Parameter	N	Mean		SD		Z value	p value
		BT	AT	BT	AT		
abdominal circumference	150	91.21	90.88	7.09	6.93	3.98	0.036

- Sphikparinaha (buttocks circumference).

Parameter	N	Mean		SD		Z value	p value
		BT	AT	BT	AT		
buttocks circumference	150	102.71	102.21	6.35	5.97	4.63	0.003

All the above findings strongly suggest that *Suryanamaskar* have potent effect on the management of Sthaulya. Various scientific parameters in the current study confirmed this observation which showed significant and highly significant improvement respectively.

CONCLUSION

Surya Namaskar was effective in many conditions of Sthaulya. The effect of Surya Namaskar was good on Kshudra Shwas, Trishna, Alpa Vyavaya, Nidradhikya and Swed Daurgandhya. The effect of Surya Namaskar was good on B.M.I, Vakshaparinaha (chest circumference) Udaraparinaha (abdominal circumference) and Sphikparinaha (buttocks circumference). Surya Namaskar was effective in overall Sthaulya.

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