

Comparative Study of Effect of Specific Yogasanas and Exercise in Obesity

Namrata B. Chouragade¹, Prashant S. Bhokardankar², Swapnil S. Bhirange³

¹Professor Dept. of Samhita Siddhant, Datta Meghe Ayurvedic Medical College Hospital and Research Centre Nagpur, ²Professor Dept. of Rasshastra–Bhaishajya Kalpana, Datta Meghe Ayurvedic Medical college Hospital and Research centre Nagpur, ³Assistant Professor Dept. of Physiology Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi, (Meghe), Wardha

Abstract

The reason for the study is to analyze the impact of chosen Yoga-Pranayama on obese individual of influenced people, in Mahatma Gandhi Ayurvedic college Hospital and Research Centre, and Datta Meghe Institute of Medical Sciences Wardha, Maharashtra. Sixty selected participants were arbitrarily separated in to two groups of thirty each, out of which group I (N-30), underwent Yogasan and group II-aerobic exercise (N-30). Pre-test and post test were directed for every one of the two groups on Weight, Basal Metabolic Index (BMI), chest circumference, abdominal circumference and waist circumference. The test group took part in their separate chosen yogasana schedule for a time of about two months. In short the Post-test concentrate obviously demonstrates that there is a critical distinction of Weight, BMI, chest circumference, abdominal circumference and waist circumference on pre-test and post test.

Keywords: Yoga, Aerobics, Obesity, BMI.

Introduction

The widespread need and significance of day by day Yogasanas efficiently arranged can't be overlooked in the present day. Yoga gives perhaps the best mean of personal development and increasing maximum capacity of one's body, mind and soul. It has been demonstrated certain that pranayama and certain Asana's are a significant methods for forestalling and relieving numerous ailments.¹ Yoga speaks to a group of practices and is increasing expanding prevalence in numerous nations around the globe, comprising of different stances (Asana), breathing and contemplation methods (Pranayama).² Yoga is accounted for to lessen pressure and nervousness, improves autonomic capacities by activating neurohormonal components by the concealment of thoughtful activity.³ The physiological impacts of Yoga preparing that have been recently detailed incorporate the hindrance of body weight gain, decrease in cholesterol levels and circulatory strain alongside progress in invulnerable capacity just as helpful mental effects⁴⁻⁹. Yogasanas utilizes different stances to create physical quality, adaptability and

continuance which can be utilized as a moderate-power practice for patients with constrained oxygen consuming limit or confined capacity to exercise.¹⁰ Yoga has been appeared to diminish hypertension and heart function improvement, balance out the thoughtful sensory system, and improve mental wellbeing and the cardiovascular function.¹¹⁻¹³.

Material and Method

60 Patients were shortlisted for the study. Ethical clearance was taken from the Institutional Ethical Committee before starting the study. Written Consent was taken from all participants before admitting in the study. Participants were divided into two groups. First group labeled as a study group and second one control group. Each group consists of thirty participants. The study group suggested asanas specially for 3 months and control group was asked to do only aerobic exercises for three months.

Group I:

Yogasanas for study group (duration- 90 minutes)

Purva asanas:

- Sun Salutations:- 6-12 full rounds in 20 minutes

Yogasanas:

- Uttanpad Chakrasana (3 rounds),
- Akarna Dhanurasana (1 minute on each side),
- Ushtrasana (2 minutes)
- Udarsanchalan (3 rounds)
- Trikonasana (1 minute on each side)
- Matsyasana (1 minute)
- Paschimottasana (1 minute)
- Ardhamatsyendrasana (2 minutes on each side)
- Shavasana (when needed)

Group II: Aerobic exercises

The follow up of the patients was taken for every one month. The results were noted time to time in the CRF (Case report form).

Table 1: Assessment parameters

S.No.	Parameters
1	Height
2	Weight
3	BMI Body mass Index
4	Abdominal circumference
5	Chest circumference
6	Waist circumference

Observation and Results

Table 2: Comparison and analysis of weight

Time Period	Group	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Before Treatment	A	30	72.73	5.47	0.99	1.18	0.24,NS
	B	30	74.33	4.96	0.90		
30 days	A	30	71.63	5.20	0.94	1.67	0.10,NS
	B	30	73.86	5.14	0.93		
60 days	A	30	70.33	5.10	0.93	2.31	0.024,S
	B	30	73.33	4.95	0.90		
90 days	A	30	68.96	5.27	0.96	2.93	0.005,S
	B	30	72.90	5.12	0.93		
100 days	A	30	68.53	5.59	1.02	2.94	0.005,S
	B	30	72.60	5.08	0.92		

Table 3: Comparison and analysis of Body Mass Index (kg/m2)

Time	Group	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Before	A	30	28.41	1.65	0.30	0.005	0.996,NS
	B	30	28.40	2.23	0.40		
30 days	A	30	27.98	1.59	0.29	0.482	0.631,NS
	B	30	28.22	2.20	0.40		
60 days	A	30	27.48	1.62	0.29	1.079	0.285,NS
	B	30	28.02	2.26	0.41		
90 days	A	30	26.93	1.51	0.27	1.874	0.066,NS
	B	30	27.85	2.24	0.41		

Table 4: Comparison and analysis of Abdominal Circumference

Time	Group	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Before	A	30	107.00	3.68	0.67	1.00	0.32,NS
	B	30	105.96	4.27	0.78		
30 days	A	30	105.46	3.15	0.57	0.25	0.80,NS
	B	30	105.23	3.92	0.71		
60 days	A	30	103.36	3.21	0.58	1.03	0.30,NS
	B	30	104.30	3.77	0.69		
90 days	A	30	101.33	2.92	0.53	2.51	0.015,S
	B	30	103.50	3.71	0.67		

Table 5: Comparison and analysis of Waist Circumference

Time	Group	N	Mean	Std. Deviation	Std. Error Mean	t-value	p-value
Before	A	30	113.26	3.32	0.60	0.08	0.93,NS
	B	30	113.33	2.89	0.52		
30 days	A	30	111.00	3.12	0.57	1.45	0.15,NS
	B	30	112.13	2.89	0.52		
60 days	A	30	109.16	3.05	0.55	2.96	0.004,S
	B	30	111.43	2.87	0.52		
90 days	A	30	106.56	3.22	0.58	4.79	0.0001,S
	B	30	110.33	2.84	0.51		

Discussion

The changes in parameters were noted from time to time. It was observed that mean weight of all the thirty study participants was reduced as compare to control group. The BMI of the control group was reduced more than study group. There were significant changes in waist and chest circumference of study group as compare to control group.

Weight: In a study done by P. B. rishikesan et al on Yoga Practice for Reducing the Male Obesity and Weight Related Psychological Difficulties-A Randomized Controlled Trial, because of yoga practice weight was reduced from 82.63 ± 10.05 to 80.47 ± 9.59 .

Waist Circumference: There is significant reduction in waist circumference. Similar results were reported by rishikesan et al reduction in waist circumference from 99.58 ± 7.37 to 95.09 ± 6.76 .¹⁴ In a study by S. Dhananjai et al, on reducing psychological distress and obesity through yoga shows reduced waist circumference from 102.08 ± 10.25 to 83.01 ± 33.0 ¹⁵

Basal Metabolic rate (BMR): Present study shows significant reduction in BMR from 28.41 to 26.93. In a study by Dr Annapurna K. and Dr. Vasantlakshmi K. on effects of yoga therapy on quality of life in woman, after three months of yoga practice shows decrease in Basal Metabolic Index from 30.79 ± 4.12 to 28.03 ± 3.95 .^{16,17}

Conclusion

Present study highlighted importance of yoga and pranayam in day to day life. Yoga helps to keep biological values under control if compared to modern era exercises like aerobic exercise.

Ethical Clearance: Taken from institutional ethics committee

Source of Funding: Self.

Conflict of Interest: Nil.

References

1. Wolff M, Sundquist K, Larsson LS, Midlov P.

- Impact of yoga on blood pressure and quality of life in patients with hypertension - a controlled trial in primary care, matched for systolic blood pressure. *BMC Cardiovasc Disord.* 2013;13:111-20.
2. Begum MN, Kamalchand K. To evaluate the effect of Yoga on moderate degree hypertension and lipid profile. *NJIRM.* 2013;4(3);109-14.
 3. Cohen DL. Yoga and hypertension. *J Yoga Phys Ther.* 2013;3:144.
 4. Madanmohan, Bhavanani AB, Dayanidy G, Sanjay Z, Basavaraddi IV. Effect of Yoga therapy on reaction time, biochemical parameters and wellness score of peri and post-menopausal diabetic patients. *Int J Yoga.* 2012;5 :10-15.
 5. Ankad RB, Herur A, Patil S, Shashikala GV, Chinagudi S. Effect of short-term Pranayama and meditation on cardiovascular functions in healthy individuals. *Heart Views.* 2011;12:58-62.
 6. Mody BS. Acute effects of Surya Namaskar on the cardiovascular & metabolic system. *J Bodyw Mov Ther.* 2011;15:343-7.
 7. Pal A, Srivastava N, Tiwari S, Verma NS, Narain VS, Agrawal GG, et al. Effect of Yogic practices on lipid profile and body fat composition in patients of coronary artery disease. *Complement Ther Med.* 2011;19:122-7.
 8. Telles S, Singh N, Joshi M, Balkrishna A. Post-traumatic stress symptoms and heart rate variability in Bihar flood survivors following Yoga: a randomized controlled study. *BMC Psychiatry.* 2010;10:18.
 9. Gopal A, Mondal S, Gandhi A, Arora S, Bhattacharjee J. Effect of integrated Yoga practices on immune responses in examination stress - a preliminary study. *Int J Yoga.* 2011;4:26-32.
 10. Birdee GS, Legedza AT, Saper RB, Bertisch SM, Eisenberg DM, Phillips RS. Characteristics of Yoga users: results of a national survey. *J Gen Intern Med.* 2008;23:1653-8.
 11. Innes KE, Selfe TK, Taylor AG. Menopause, the metabolic syndrome, and mind-body therapies. *Menopause.* 2008;15:1005-13.
 12. Pullen PR, Nagamia SH, Mehta PK, Thompson WR, Benardot D, Hammoud R, et al. Effects of Yoga on inflammation and exercise capacity in patients with chronic heart failure. *J Card Fail.* 2008;14:407-413.
 13. Vempati RP, Telles S. Yoga-based guided relaxation reduces sympathetic activity judged from baseline levels. *Psychol Rep.* 2002;90:487-94.
 14. JCDR published online 2016 Nov. 10(11), PMC198375
 15. *Int J Yoga* 2013, Jan-June 6(1):66-70.
 16. *International journal of yoga and obesity* volume-2, issue -1 page no. 18-24
 17. An Online International Journal Available at <http://www.cibtech.org/jms.htm> 2012 Vol. 2 (1) January-April, pp.93-98/Tundwala et al.