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THERAPEUTIC EFFECT OF YOGA AND RESTRICTED DIET IN THE MANAGEMENT OF OBESITY

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ABSTRACT

Obesity is mainly a life style disorder which provides the platforms for the so many hazards like Hypertension, Coronary heart disease, Diabetes Mellitus, Osteoarthritis, Infertility, Impotency as well as Psychological disorders like Stress; Anxiety, Depression, etc. Aim of this Study to observe the effect of Yoga Practice and Diet control on Obesity, the criteria was Body Mass Index. Eight weeks study was conducted at Varanasi area, UP. For this study 25 patients were selected randomly. In this Pre-post study data were collected before and after intervention of Yoga Practice and balanced diet plan for eight weeks. BMI was measured according to WHO Body Mass Index Chart. Paired t- test was applied for statistical analysis and p-value < .01 was considered the level of significance. It is concluded that Regular practice of Asanas and controlled diet plan not only helps in better metabolism but also regulates the digestive process. The better digestion, assimilation, and excretion regulate the body physiology which plays a very important role to reduce BMI.

KEYWORDS: Yoga, Asanas, Diet plan, BMI.

INTRODUCTION

Now a days most of the persons are habituated to luxurious and comfortable lifestyle, leads to various chronic diseases like hypertension, Ischemic heart diseases, varicose vein, atherosclerosis, osteoarthritis, infertility, cancer etc. These diseases are recognized as major non- communicable diseases for which Obesity (Sthoulya) is traces to be a major risk factor. Obesity is the commonest nutritional disorder in affluent societies. Reduced Physical activities and Increased energy Intakes are the most important factors causing Obesity.

In Ayurveda, Obesity is correlated with 'Sthoulya'. Sthoulya has been described since very early days in various Samhitas. Acharya Charaka has described Sthoulya among the eight undesirable physical appearances.(Ch. Su. 21). According to Ayurvedic text in the Pathogenesis of Sthoulya, Kledaka Kapha, Samana and Vyaan vayu, Medovaha shrotodusti and Medodhatvagni mandyata are main responsible factors.

In Obese patients, excess fat accumulates because there is imbalance between energy intake and expenditure. Whenever the energy intake is more than the energy expenditure, the excess calories of energy are stored in adipose tissues.

According to WHO in 2014, more than 1.9 billion adults, 18 years and older, were overweight in all over the world. Of these over 600 million were Obese and also Overweight and Obesity are the Fifth leading risk for global deaths. That's why it is very important to recognize, control and manage the Obesity.

Body Mass Index (BMI) is a diagnostical criteria to define conditions of weight gain or weight loss i.e. Overweight Underweight or Normal weight. It is defined as the weight in Kilograms divided by the squares of height in meters.(kg/m^2). WHO defined as,

1. A normal weight as a BMI range - 18.5 to 24.9
2. Sthoulya (overweight) as a BMI range - 25.0 to 29.9
3. Atisthoulya(Obese) as a BMI range - 30 to 39.9
4. Atisthoulya (Extremely Obese) as a BMI range - > 40.0

In Ayurveda, there is a unique concept of Prakruti (Constitution) which Plays an Important role in the diagnosis prevention, and management of diseases such as sthoulya.

Yoga therapy affects body, internal organs, endocrine glands, brain and Body-Mind Complex. Increased exercise results in loss of body fat and preserves lean body mass. This study demonstrated that a diet with higher protein and reduced carbohydrates combined with

exercise addictively improved body composition during weight loss journey.

MATERIAL AND METHODS

- To observe the effect of Yoga Practice and Diet control on obesity, the criteria was Body Mass Index (BMI). Eight weeks study was conducted near Varanasi. For this study, Total 25 patients were selected randomly with BMI between 25 to 39.9 kg/m^2 from the OPD of Government P.G. Ayurveda College and Hospital,, Varanasi.
- In this study, Data were collected before and after intervention of daily morning yoga practices for 90 minutes which included *Kapalbhati*, *Anuloma-viloma Suryanamaskarm, Trikodasana, Paschimottasana, Vajrasana, and Chakrasana*.
- There was a restricted diet plan for each and every patients. All patients were recommended for high protein rich diet (pulses, beans, sprouts, fish etc), low carbohydrate (very limited sugar, rice, potatoes, wheats etc) and all seasonal fruits(except banana, mango, grapes).
- During this study period meals were also restricted to two times per day at interval of 14 hrs. Night meals are advised to be taken before 7 pm.
- Statistical Data was calculated by Instate graph pad3.

OBSERVATION AND RESULTS

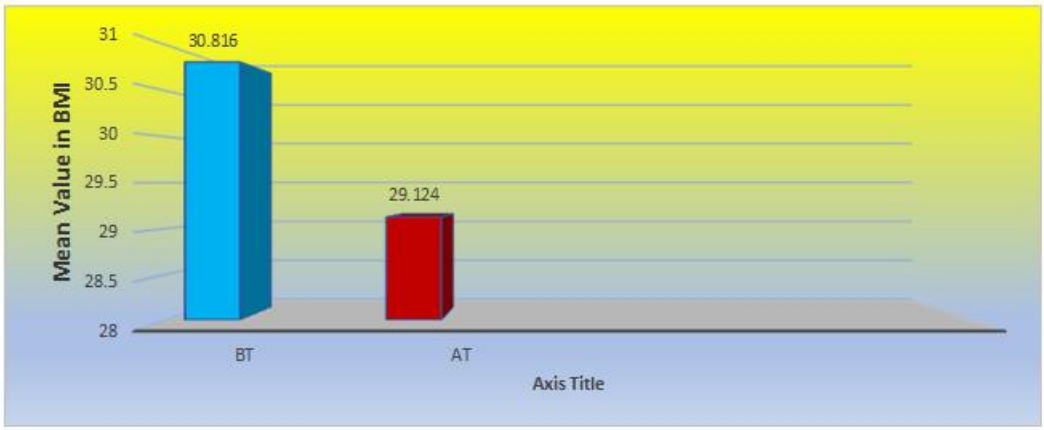
Observational criteria

No improvement	< 1 % decrease in BMI
Mild Improvement	1 to 3 % decrease in BMI
Moderate Improvement	3 to 5 % decrease in BMI
Significant Improvement	>5 % decrease in BMI

No.	Age/ Sex	BMI before study (in $kg/m^{2)}$	BMI after 8 weeks (in $kg/m^{2)}$	% decrease BMI	Observation
1	35/F	30.2	29.7	1.65%	Mild Improved
2	20/M	31.6	29.4	6.96%	Significant Improved
3	38/M	28.5	26.0	8.77%	Significant Improved
4	28/M	32.4	30.9	4.62%	Moderate Improved
5	24/F	28.2	26.2	7.09%	Significant Improved
6	22/M	27.4	25.4	7.20%	Significant Improved
7	40/M	31.5	28.4	9.84%	Significant Improved
8	19/M	26.4	23.6	10.60%	Significant Improved
9	23/M	34.4	33.6	2.3%	Mild Improved
10	48/M	31.2	28.2	9.61%	Significant Improved
11	37/M	33.5	32.0	4.47%	Moderate Improved
12	22/F	30.4	28.2	7.20%	Significant Improved
13	25/M	28.2	25.1	10.99%	Significant Improved
14	24/M	29.4	28.1	4.42%	Moderate Improved
15	42/M	33.2	33.0	0.60%	Not Improved
16	23/F	29.4	27.0	8.16%	Significant Improved
17	45/M	28.2	26.9	4.60%	Moderate Improved
18	20/F	30.4	27.1	10.85%	Significant Improved
19	35/M	31.2	30.8	1.28%	Not Improved
20	44/M	34.6	34.2	1.15%	Not Improved
21	18/M	30.4	28.8	5.26%	Significant Improved
22	26/M	34.2	33.8	1.16%	Not Improved
23	21/M	30.1	27.1	9.96%	Significant Improved
24	50/F	29.6	29.0	2.02%	Mild Improved
25	21/M	35.8	35.6	0.55%	Not Improved

RESULTS

Test	N	Mean	SD	r	Sed	df	T	Significance
Pre	25	30.816	2.451	0.9613	0.2094	24	8.079	<.0001
Post	25	29.124	3.157					



The total effect of Intervention provided Highly Significant result with P- value <.0001.

DISCUSSION AND CONCLUSION

- Obesity is increasing globally due to sedentary and luxurious lifestyle with rapid urbanization. Daily practice of Yoga not only helps in better metabolism but it also regulates the Digestive System. The better digestion assimilation, and excretion of waste material at a regular time interval regulate the body physiology. And also, reduction of the high fat diet, packed processed food and addition of high protein, high fibre, vegetables, fruits riches diet prevent weight gain, obesity and other metabolic syndrome.
- Yoga has considered all aspects of obesity i.e. physical, mental and emotional. Yoga effects Body mind complex, which can be practiced effectively to reduce the weight and achieve a normal healthy condition of body and mind.
- **Suryanamaskaram** harmonizes the Prana throughout the body thus revitalizes the whole body and reduces the whole body fat. Pranayama increase the lung capacity and help in burning fats. Other Asanas are useful to reduce the fats in various parts, especially forward bending, twisting and backward bending asana help to reduce the fats near abdomen, hips and other areas.
- In this study, we observed the synergistic effect of 7 types of yoga practices and high protein and restricted carbohydrates diet regime with proper Dincharya and Ratricharya on Body mass index.
- The present study shows a significant reduction in the BMI and of course in body weight when a restricted diet plan and daily morning 90 minutes regular yoga practice with full avoidances of unhealthy oily and packed food were added in the selected patients.

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