



“THERAPEUTIC APPLICATIONS OF YOGA FOR REDUCE WEIGHT AND IMPROVE LIPID PROFILE OF OVER WEIGHT WOMEN”

Dr. Rangappa¹, Dr. Rashmitha², Dr. K. Krishna Sharma³,

1. **Dr. Rangappa**, Guest Lecturer, Dept. of Human Consciousness and Yogic Sciences, University College Mangalore, Karnataka, INDIA. Mob: 08123862919.
2. **Dr. Rashmitha**, Guest Lecturer, Dept. of Human Consciousness and Yogic Sciences, Mangalore University, Mangalagangothri-574199. Karnataka, INDIA.
3. **Dr. K. Krishna Sharma**, Professor and Chairman, Dept. of Human Consciousness and Yogic Sciences, Mangalore University, Mangalagangothri-574199. Karnataka, INDIA.

ABSTRACT

This study entitled “Therapeutic Applications of Yoga for reduce Weight and Improve Lipid Profile of Overweight Women” has been conducted in the Dept. of Human Consciousness and Yogic Sciences, Mangalore University. The aim of this study is to evaluate the effects of Yoga Therapy and Chandrayana Vrata on Overweight in Women. Objectives are, to bring about reduction of body weight, Body Mass Index (BMI), reduction of Total cholesterol, Triglyceride, HDL-direct, LDL-direct, and improvement in their quality of life by decreasing stress levels. 51 Overweight women, aged 23 to 60 years were randomly selected from the Mangalore University campus, Dakshina Kannada, Karnataka. One month practical sessions included a series of Asanas, Pranayamas and relaxation techniques with Chandrayana diet for one month With a total of 30 subjects treated as Group I i.e., Experimental group. Another 21 subjects were selected for control group. Control group was not exposed to any yoga practices.

The results of various tests have been compared for the two groups through student’s paired “t” test. After the programme the experimental group showed a significant result in all the parameters. Similarly significant results are observe in the case of body weight ($t=10.310$, $p=3.28441E-11$), Body Mass Index ($t=10.498$, $p=2.16593E-11$), all of which were statistically significant. The lipid profile such as total cholesterol ($t=5.384$, $P=8.70394E-06$), HDL-direct ($t=3.909$, $P=0.000511459$), LDL-direct ($t=5.360$, $p=9.31262E-06$), are also found to be statistically significant in experiment group. But there were no significant change in Control group. The present study reveals that helps efficiently in reducing Overweight. Yoga therapy and chandrayana vrata will be a preferable alternative therapy easily incorporated in their day to day life.

Key words: Yoga Therapy, Chandrayana Vrata, Obesity, Weight, Triglyceride.

Introduction

At present world women are gradually becoming overweight than men. Irregular food habits, stress, sleeplessness, hormonal imbalance and sedentary lifestyle are some of the factors which affect directly to the overweight in women. Rise in the prevalence of overweight is one of the alarming public health issues facing the world. It is the main underlying cause of life threatening disorders like coronary heart disease, diabetes mellitus, atherosclerosis, hypertension, asthma, stroke, arthritis, cancer and also menstrual disorders.

Overweight women suffer emotionally and show withdrawal symptoms such as, they are usually shy to show themselves up. They also suffer abnormal hunger pangs and seem to be consumed with thoughts of food. Laziness and indolence becomes their second nature. In most cases, it is easy to ignore overweight in its early stage, especially when one is asymptomatic. Strengthening the immune system is also vital since some illnesses can cause overweight. Research findings reveal remarkable improvements of effect of yoga therapy on overweight. Regular practices of yoga prevent and reduce body weight, cholesterol level, stress levels, rate of progression of complications and severity as well.

Yogic diet, asanas, pranayamas, dhyana, kriyas and relaxation are an important aspect of lifestyle modification. One part of yogic practice that is tapas helps to purify of body along with sensory organs which are the parts of mind can be achieved by adopting proper Tapas. It means Austerity. it can help a person to learn the right attitude towards food as well as understand concepts based on the trigunas and tridosas for better health. With this idea Chandrayana Tapas has been introduced to see the therapeutic values of the overweight women

According to 'Chtuvargacintamani of Hemadri: In the beginning of the chandrayana Vrata, various Gods have to be invoked, offerings be made in the sacrifice. The Hutastista [the remaining food shall offering] is consumed. The vrata details that "the food shall be consumed with gradual reduction fifteen hands full of food should be taken in the full moon day and it should be reduced one hand full every day, so that on a new moon day it becomes a total fast. Again the food is increased one hand full every day, so that it becomes fifteen hands full on a full moon day. Here, the total normal satvika food is calculated with calories and the reduction and the increments are calculated not only with the quantity, but also with the calories and with the concepts of carbohydrate, fat, protein, vitamins and trace minerals along with water.

Literature survey:

The Study was done by Dr Annapoorna K. & Dr Vasantalaxmi. K, 'Effects of Yoga therapy on Obesity and Quality of life In Women: A Longitudinal study' was shows significant result in the BMI, Waist- hip Ratio. Yoga training for 3 months on 25 obese females aged between 20 to 50 years, resulted in a significant reductions in all body weight measures such as decrease in Body Mass Index (0.001), Waist hip ratio (0.001), and in physiological measures such as Systolic Blood Pressure (0.01), Diastolic Blood Pressure (0.038), Pulse Rate (0.001)(P values < 0.05) all of which were statistically significant.

Dr. Gharote from Lonavala studied the 'Therapeutic effect of yoga on cases of obesity' and the results were assessed through measurements of skin fold at various points. Results showed significant decrease in skin fold measurement both in males and females.

Dr, V.S. Dange ET. All conducted a study on 'Effect of Yoga Therapy on Obesity and Lipid Profile. 25 obese both male and females selected for the study for the period of four and half months. The study was organized by Sanmithra sabha and Yoga health center, Nagpur. The 10 people are selected for control group. The practices includes Asana, Pranayama specially Bhastrika and Surya namaskara. There is significant result in body weight, abdominal and hip girth and lipid profile.

Overweight constitutes one of the major cardio-vascular risk factors. The present study was carried out to evaluate the effect of yoga therapy on overweight and to reduce the risk factors of Overweight.

Objectives of the study:

1. To find out the effects in Weight, Body Mass Index (BMI), and lipid profile by selected yogic practices on Overweight in Women.

Hypotheses:

In order to study the problem scientifically, the following Null Hypotheses were set:

1. There is no significant change in pre and post Body Weight.
2. There is no significant change in Lipid Profile.

Variables

Independent Variable : Selected Yogic practices

Dependent Variable : Lipid profile.

Subject Selection Criteria:

Inclusion criteria:

- Age between 23 To 60 years
- Subjects having BMI above 25 Kg/m² .

Exclusion criteria:

- Surgery of any kind done within 6 months.
- Sick (Here refers to Cardiac problems, hypertension, severe back ache, varicose vein etc).

Materials and Methods:

The present study was conducted to assess the effect of selected yogic practices on the Overweight in Women. For the present study, 51 overweight women with the age group 23 to 60 years were selected and divided into two groups. The first group of 30 subjects named 'Experimental group' was exposed to the Yoga therapy session for 90 minutes once a day for one month. Department of Human Consciousness and Yogic Sciences, Mangalore University, Mangalore, Karnataka. In this practical session, Asanas, Pranayama and Relaxation Techniques were taught systematically by giving importance to each subject along with the practice Chandrayana diet also followed for one month (Poornima to Next Poornima). Second group of 21 subjects, named 'control group' live their routine life. Detailed case histories of the subjects were taken before starting the yoga therapy. Parameters were selected to know the prognosis of Overweight. Before beginning of experiment BMI, lipid profile test of the subjects were recorded and same repeated after one month.

ASSESSMENTS:

Body weight and Body Mass Index (BMI):

The body mass index (BMI) will be calculated as the body weight (in kg), in light clothing and without shoes, divided by height (in m) squar. Body weight will be measured to 0.05 kg using an electronic balance (GTEP Precision Electronic Instruments Model No.11, New Delhi, India). Height will be measured to the nearest 0.1 cm (Gulick Anthropometric tape, model J00305, Lafayette Instrument, U.S.A.)

Lipid profile: Lipids are water insoluble organic substances occurring mostly in association with fatty acids. The categories of lipids are;

- Total cholesterol
- High-density lipoprotein (HDL)
- Low-density lipoprotein (LDL)
- Triglycerides

Triglycerides, fatty acids, esters of glycerol constitute the bulk of simple tissues. In the post absorptive and fasted status 50-90% of the energy is released from the adipose tissue, on hydrolysis of triglycerides. The normal range of triglycerides is 35-165 mg/dl. Cholesterol is a chemical substance found in all animal fats. Cholesterol is an essential component mainly for cellular metabolism. The normal range of cholesterol is 160-220 mm/gl. In adults, LDL and VLDL transport cholesterol from liver to the cells. As they move, they leave plaque forming cholesterol in the walls of arteries, clogging the artery walls and setting the stage for heart disease. Hence, both LDL and VLDL are considered 'bad' cholesterol. HDL removes cholesterol from the walls of arteries returns it to the liver, and help the liver to excrete it as bile. For this reason, HDL is considered as 'good' cholesterol. Normal range of HDL is 35-70 mg/dl and that of LDL is 100-165 mg/dl

Yogic intervention: The following Yogic practices were given to Experimental group

ASANAS	PRANAYAMAS	RELAXATION
Svastikasana	Ujjayi	Yoga nidra
Vajrasana	Anuloma Viloma	
Supta vajrasana	Bhastrika	
Simhasana	Pranava meditation	
Tadasana I		
Trikonasana		
Parshvakonasana		
Paschimottanasana		
Purvottanasana		
Pavanamuktasana		
Bhujangasana		
Shalabhasana		
Dhanurasana		
Vakrasana		
Janushirshasana		
Upavishtakonasana		
Baddhakonasana		
Viparitarani		
Uttanapadasana		

Chandrayana Diet plan:

Considering the sedentary life style of the subjects a diet providing 1900 calories approximately was taken as a standard. Care was taken to include all the necessary ingredients required by the body in adequate to maintain health. The diet was planned considering the tastes and eating habits of the subjects.

The diet consisted of strictly vegetarian food stuff naturally low in calories, very low in fat and high in nutrition and Fibre. These are a high volume food that fill the stomach and gives one the feeling of satiety. Protein depletion was avoided the green gram juice regularly.

The intake of food was reduced by approximately 126 calories each day from the day of Poornima for the next 15 days. On the 15th day (Amavasya), all subjects observed complete fast. Some of them who felt weakness were allowed to drink tender coconut water; very minimum yogic practices were done on that day. The diet was then increased from the next day of Amavasya to next Poornima by 126 calories each day to reach the normal diet of 1900 calories a day. The daily diet regimen was given to the subjects one day earlier.

RESULTS:

All the subjects under study were tested before and after 30 days of yoga training which consisted of 90 minutes of practice in a day. The readings were compared with the reading of control group. The reading of experimental group showed significant variation and that of control group does not shows any improvement. The final result shows an overall reduction in Body Weight, Body Mass Index, total cholesterol, triglyceride, HDL-direct, LDL-direct, considerably in the Experimental group. Therefore, in general we can analyze the result as follows:

- ❖ Weight & BMI is reduced in all the subjects of experimental group.
- ❖ Total cholesterol, triglyceride, HDL-direct, LDL-direct ratios were reduced in all the subjects of Experimental Group.

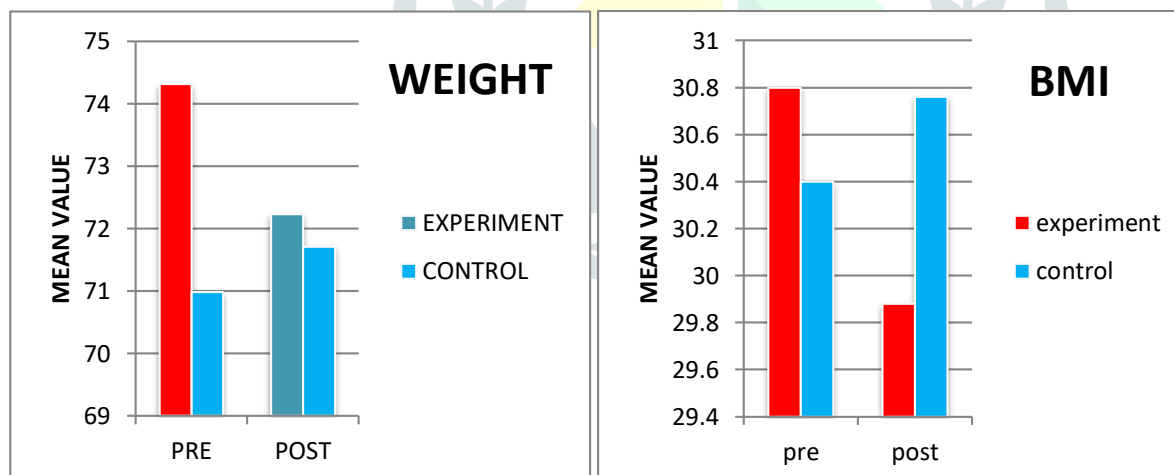
Result of Statistical Analysis of Experimental Group:

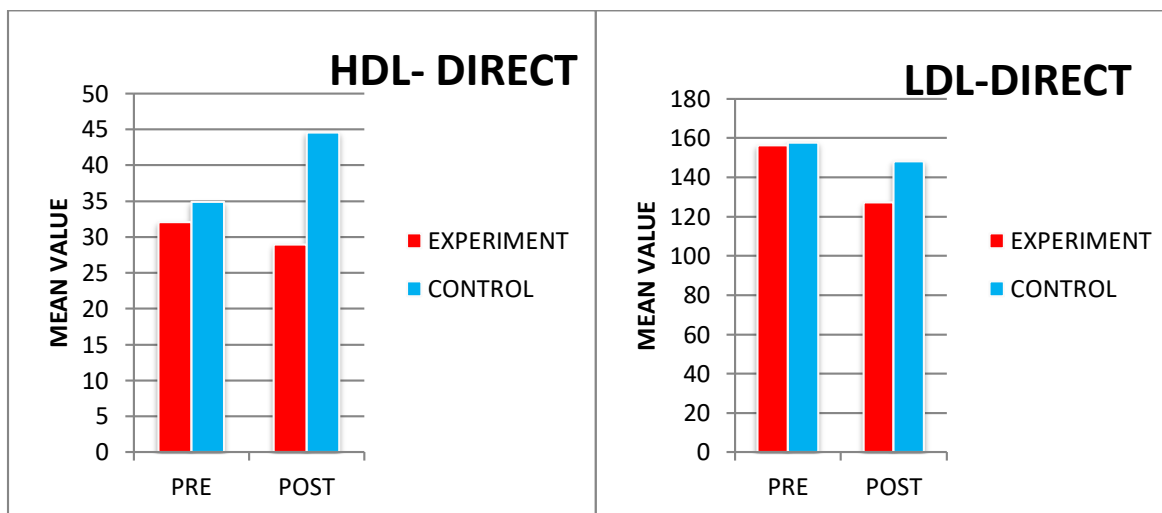
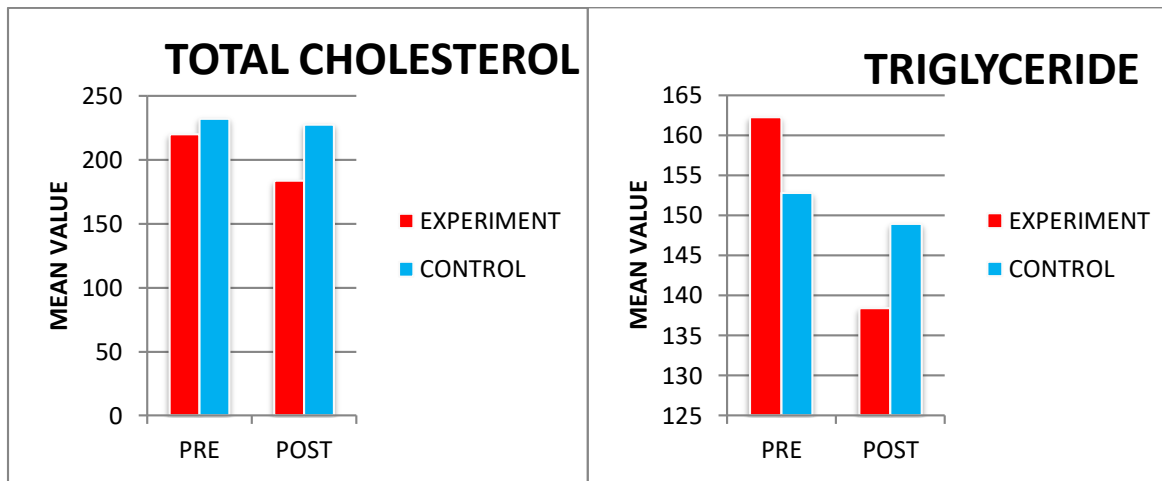
Parameters	MEAN		SD		T test	P test	Result
	pre	post	pre	post			
Weight	74.31	72.23	2.392	2.393	10.310	3.28441E-11	HS
BMI	30.80	29.88	0.886	0.890	10.498	2.16593E-11	HS
Total Cholesterol	220.2	183.62	5.954	5.782	6.820	1.72537E-07	HS
Triglyceride	162.26	138.39	8.137	6.109	5.384	8.70394E-06	HS
HDL-direct	32.08	28.98	1.327	0.758	3.909	0.000511459	S
LDL-direct	156.31	127.24	6.029	5.521	5.360	9.31262E-06	HS

Result of Statistical Analysis of Control Group:

Parameters	MEAN		SD		T test	P test	Result
	pre	post	pre	post			
Weight	70.98	71.71	1.482	1.441	-6.275	0.97318E-06	NS
BMI	30.4	30.76	0.719	0.701	-5.206	0.28624E-05	NS
Total Cholesterol	232.21	227.66	11.705	9.664	1.051	0.305653959	NS
Triglyceride	152.81	148.94	10.857	11.515	0.669	0.510895974	NS
HDL-direct	34.9	44.58	1.217	1.537	-6.292	3.83562E-06	HS*
LDL-direct	157.68	148.20	13.600	9.261	1.433	0.167029776	NS

*High Significant shown in control group was in Negative way

Graphical Representation of Mean Values of Different Variables of Experimental and Control group:



Discussion:

The purpose of this study was to determine if the yoga practices show the improvement in lipid profile of overweight women in terms of reduction in body weight and reduction in lipid profile. Yoga training for 30 days resulted in a significant reductions in all body weight measures such as decrease in Body Mass Index, Systolic Blood Pressure, Diastolic Blood Pressure and lipid profile all of which was statistically significant. In the present study, the result of Experimental group was proved to be statistically highly significant for BMI, Weight, and Lipid profile. Every member felt improvement after the yoga therapy and chandrayana diet. But there was no significant improvement among control group.

Effects of yoga practices which have been documented include improving digestion, excretion and immune function. But the variation in the rate of success could be depended on the regularity of the practice and maintaining of Chandrayana diet. Thus we can say that Yoga therapy is fully fruitful for those who adhere to the regular practice.

The Yoga training for 30 days resulted in a significant reductions in all parameters such as body weight ($t=10.310$, $p=3.28441E-11$), Body Mass Index ($t=10.498$, $p=2.16593E-11$), all of which were statistically significant. The lipid profile such as total cholesterol ($t=5.384$, $P=8.70394E-06$), HDL-direct ($t=3.909$, $P=0.000511459$), LDL-direct ($t=5.360$, $p=9.31262E-06$), showed significant result. Practice of yoga showed reduction in over weight there by controlling overweight.

In the present study, yoga practices helped in energizing the body, which has been in an inactive mode due to overweight in women. Importantly, yoga helped in cleansing the body off toxins and reduced fatigue. Asanas helped to burn up excess fat, excess cholesterol level, triglyceride and LDL by improving metabolism, toning up muscles. The asanas like Uttanapadasana, Bhujangasana, Shalabhasana, Pavanamuktasana, Uttanapadasana are helps to reduce the abdominal girth. Baddhakonasana and Upavishtakonasana help to overcome the menstrual problems. Bharadvajasana, Vakrasana gives massaging effect to the abdomen. Practice of Pranayama,

and Meditation calmed the mind, promoted mental alertness and helped to enjoy a healthy life style. Chandrayana diet was reduced craving for food stopped and they began to enjoy a normal appetite. Additionally, they developed a positive mental attitude, with ability to face life with renewed hope and confidence. Relaxation techniques of Yoga Nidra helped in achieving inner balance and tranquillity in women by reducing stress levels.

Conclusion:

The present study reveals that yoga therapy helps efficiently in reducing Overweight. Of the treatment modalities for overweight in women yoga therapy and chandrayana vrata may be a preferable alternative therapy easily incorporated in their day to day life. A larger sample size with a long term follow up is suggested to prove the efficacy of yoga therapy in persons who are at risk for various physical illnesses with overweight.

Thus from the significant changes observed using different parameters in this study one can say or conclude that yoga therapy and chandrayana vrata has several beneficial effects, in the form of improvement in quality of life by reducing levels and reduction in body weight in women

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