Impact Of Pragya Yoga Exercise On Lipid Profile Among Overweight Women

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Abstract

Obesity is defined as abnormal or excessive fat accumulation that presents risks for many other disorders. It is affecting populations across the world in all age groups which may be caused due to unhealthy lifestyles or genetic predisposition. The present study was conducted to assess the impact of pragya-yoga exercise (a defined set of 16 yogic postures) on lipid profile among overweight women. 30 overweight women (BMI>25kg/m) were selected from the polyclinic of Dev Sanskriti university Haridwar, with their ages ranging from 30 to 50 years (group average age ±S.D., 38.37±5.52 years). All participants practiced Pragya Yoga exercise for 40 minutes on each day for eight weeks under supervision of a female yoga therapist. Data was analyzed using paired sample t-test. There were statistically significant reduction in total cholesterol level($df=28$, $p<0.01$), total triglyceride level($df=28$, $p<0.01$), low density lipoprotein($df=29$,$p<0.01$) and significant elevation in high density lipoprotein($df=29$, $p<0.01$). The result suggests that Pragya-yoga practices are beneficial for the management of lipid profile among overweight women.

Key words: Pragya-yoga exercise, lipid profile, overweight women

Introduction:

With the advent of this fast paced technological world in the twenty first century, humans have become more prone to lifestyle related disorders owing to lack of physical activities and faulty dietary habits like prepackaged foods loaded with carbohydrates and sugars. These have resulted in a significant increase in the number of patients suffering from obesity (Kushi , L.H.2006).

Obesity is defined as abnormal or excessive fat accumulation that presents a risk to health. It is a treatable disease that is a worldwide health concern (Shetty, B.2017). It is caused by genetic, environmental and dietary factors and can be difficult to control through dieting alone. A crude population measure of obesity is the body mass index (BMI), a person's weight (in kilograms) divided by the square of his or her height (in metres). A person with a BMI of 30 or more is generally considered obese. A person with a BMI equal to or more than 25 is considered overweight (Sayyed, A.2019).

The ill effects of obesity can be measured directly by the aid of biochemical markers i.e. lipid profile (ldl, hdl, vldl, chylomicrons). It provides the clear details of the amount of fat-linked bio- molecules that directly affect the state of obesity. The menace of obesity is affecting the population worldwide. The escalating pace of obesity if not controlled will surpass the population when it comes to malnutrition.

Yoga is an ancient Indian technique of healing the body and the mind that was developed by the ancient sages (Pullen, P.R.2008). It played a major role in improving and maintaining the lifestyle of people. Currently it has been revived to maintain the state of health and alleviate ill effects of diseases. There are various components of Yoga which include asanas (yogic postures), pranayams (breathing exercises) and dhyanas (meditation) (Sarvottam, K.2014).

According to Vedic philosophy, the root cause of all physical ailments lie in the emotional state of a human being. A disease is manifested in the form of disturbances in both physical and mental state. Hence to cure a disease, emphasis should be laid on both these aspects which would provide a holistic approach of treatment. Researchers have shown that inculcation of Yoga in life helps in decreasing hypertension, cardiac diseases and boosting our nervous system and psychological health (Vempati, R.P., Telles, S.2002). Pragya Yoga Vyayam which is a series of 16 *aasanas* practiced with breathing awareness along with chanting of mantras, developed by Pandit Sri Ram Sharma Acharya relaxes both mind and body.

Yoga as a therapeutic process, has been shown to be useful to individuals with cardiovascular disease and diabetes (Gadham , J.2015). Yoga is also beneficial in reducing body fat while decreasing the risk factors involved in atherosclerosis (Khre, 2002).

Studies have found that yoga and regular walking improved anthropometric variables and serum lipid profile in overweight and obese individuals. Raja-yoga meditation practitioners showed lower level of TC, TG, VLDL and FBS and higher level of HDL

than non-practioners. An 8-week of yoga training module improved body composition and TC levels in obese adolescent boys, suggesting that yoga training may be effective in controlling some metabolic syndrome factors (Madape, A. 2015). 6 months practice showed significant reduction in total cholesterol, low-density lipoprotein (LDL) and triglycerides. Also there was a significant increase in the high-density lipoprotein (HDL) (Mody, B.S. 2011).

In addition, in a study on Surya Namskar practiced by Indian participants (18-22 years) daily 30 minutes showed that daily practice of Surya namskar helped to improve cardio respiratory fitness, as well as promoted weight management (Nilakathan , S. 2016). If practiced for a reasonable time long enough to bring about a state of light perspiration, a reasonable amount of toxins can be eliminated from the body through the pores of the skin and thus maintain the sound body and mind status (Singh, S., 2001).

The effect of exercise therapy on fasting blood glucose, lipid profile, oxidative stress markers and anti oxidant status in patients with type 2 diabetes showed that 30 days hath-Yoga practices decreased LDL cholesterol and triglycerides level and improved HDL level (Prasad, K.V.V. 2006).

The *asanas* in pragya yoga could help in the balancing various functions of body and mind. Several reports have been made with regard to its effect on respiratory, hormonal, neural system, metabolic, muscle–strength and body–composition. The 3-month program was designed to change eating and activity patterns and to improve self-efficacy, quality of life, well-being, vitality, and self-awareness around food choices, stress management, and barriers to weight loss (Tells, S.,2014). The effect of exercise on blood lipid profiles was widely reported. Physical activity raised HDL levels and decreased the concentration of very low-density lipoprotein cholesterol and triglycerides. Physical activity and HDL appeared to be linked via HDL's role in triglyceride metabolism. The practice of yoga was reported to reduce body fat, the waist circumference and increase muscle strength in overweight and obese persons with Obesity (Dhananjai,S., 2013). Studies also shown that overweight and obese participants having experience in yoga significance increase in their quality of life in Yoga treatment group.

The present study was conducted to assess the impact of pragya-yoga exercise (a group of 16 yogic postures) on lipid profile among overweight women. Following were objectives of the study:

- To study the effect of *pragya yoga* exercise on total cholesterol level.
- To study the effect of *pragya yoga* exercise on total triglyceride level.
- To study the effect of *pragya yoga* exercise on HDL level.
- To study the effect of *pragya yoga* exercise on LDL level.

Research methodology

Participants

30 overweight women (BMI≥25 kg/m^2) were selected from the polyclinic at Dev Sanskriti University, Haridwar with their ages ranging from 30 to 50 years. All participants practiced pragya yoga exercise

for 40 minutes on each day for eight weeks under the supervision of a qualified female yoga therapist.

Inclusive criteria of the study

The inclusion criteria were, BMI >25 kg/m, age range between 30 to 50 years. The participation of patients qualified in the study was voluntary without any remuneration.

Exclusive criteria of the study

The exclusive criteria were, doing any type of yogic exercises, taking antioxidant drugs, with any kind of addiction (smoking, tobacco chewing and alcohol intake), hypertension, cardio-vascular disorders or any other systemic disease were excluded.

Collection of blood sample & Measurement of lipid Profile

Blood collection was done by venous method (middle cubital fossa). Collected blood serum was separated after 30 minute intervals. Lipid profile included total cholesterol test done by CHOD (cholesterol oxidaze method), Triglyceride (Tg) done by enzymatic methods), the HDL Cholesterol by phosphor tungstic method and LDL by formulation. All these tests were done under end point reaction slop by using semi autoanalyzer (RA 50 ERBA). The pretest results were obtained initially and the yogic intervention was given from the following day for eight weeks.

Intervention

Pragya Yoga exercise was practiced for 40 minutes per day for a period of eight weeks by the participants under the guidance of a qualified female yoga therapist. The timing of Pragya yoga classes were between 6:00 am to 7:00 am daily, except on Sundays. Pragya yoga has 16 steps comprising yogic postures and each step is associated with one of nine words of Gayatri mantra along with breath awareness. The intervention details are given in table 1.

Table 1.Intervention of Pragya Yoga exercise

Yogic postures	Mantras
Tadasana	Om bhooh
Padahastasna	Om bhuvah
Vajrasana	Om swah
Ustrasna	Tat
Yoga mudrasana	Savitur
Ardhatadasna	Varenyam
Shashankasna	Bhargo
Bhujangasana	Devasya
Tiryak bhujagasana(left)	Dhimahi
Tirayak bhujangasana(right)	Dhiyo
Shashankasana	Yonah
Ardhatadasana	Prachodayat
Utakatasna	Bhooh
Padhastasna	Bhuvah
Tadasana	Swah
Tadasna and release	Chanting of Om

Results

Study data was analyzed using paired sample t-test. There were statistically significant reduction in total cholesterol level (df=28, $p<0.01$), total triglyceride level (df=28, $p<0.01$), low density lipoprotein (df=29,$p<0.01$) and significant elevation in high density lipoprotein (df=29, $p<0.01$). (Table 2-5).

Table 2. Comparison of Total cholesterol before and after practice of *pragya yoga vyayam*

	Mean	SD	df	R	t-value	significance
Pre	192.79	40.95	28	0.986	6.31	0.01
Post	182.62	34.85				

Table 3. Comparison of Total triglyceride before and after of *pragya yoga vyayam*

	Mean	SD	Df	R	t-value	significance
Pre	173.96	62	28	0.98	8.28	0.01
Post	152.62	54.07				

Table 4. Comparison of HDL before and after of *pragya yoga vyayam*

	Mean	SD	Df	r	t-value	significance
Pre	39.83	6.31	29	0.74	7.63	0.01
Post	45.66	6.75				

Table 5. Comparison of LDL before and after of *pragya yoga vyayam*

	Mean	SD	Df	r	t-value	significance
Pre	91.3	9.55	29	0.83	3.13	0.01
Post	86.26	9.28				

Discussion

Data were analyzed using paired sample t-test. There were statistically significant reduction in total cholesterol level ($df=28$, $p<0.01$), total triglyceride level($df=28$, $p<0.01$), low density lipoprotein ($df=29$,$p<0.01$) and significant elevation in high density lipoprotein ($df=29$, $p<0.01$). therefore this signifies the success of *pragya yoga* on the lipid profile in over weight woman.

Research showed that the practice of *pragya yoga vyayam* could help maintain normal level of lipid profile. Coronary artery disease is a major cause of death in the modern age. It results from the deposits of cholesterol and fat, which leads to the blockage of arteries, which in turn obstructs supply of oxygen and blood to the heart muscles. The deficiency of blood and oxygen leads to angina and heart attacks. Diet (rich cholesterol diet), stress, high blood pressure, obesity, lack of physical activity, smoking etc. result in an exorbitant increase in the number of heart Disease. The conventional treatment of these includes medical management with the help of drugs. Therefore significant research should be done in this field to enable us to fight against these life threatening diseases.

Conclusion

Yoga is fundamentally different from conventional medical practice in its approach to healthcare. This research study showed that *pragya yoga vyayam* has a moderating effect on cholesterol level. This moderating effect could be used as supplementary treatment to cholesterol disorders. Though the study did not included randomized controlled group, rather it is a single arm study, yet it indicated the utility of Yogic practices especially Pragya Yoga in reducing cholesterol level. This study was performed only in women participants; further studies can be performed on a large heterogeneous sample size.

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