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Original Research Paper

Health Science

EFFECT OF YOGIC PRACTICES WITH VARMA THERAPY ON HDL AND TOTAL CHOLESTEROL AMONG HYPERTENSIVE MIDDLE AGED MEN

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ABSTRACT

The present random group experimental study was designed to find out the effect of yogic practices with varma therapy on HDL and Total Cholesterol among hypertensive middle aged men. It was hypothesized that there would be significant difference in yogic practices with varma therapy than the control group on HDL and Total Cholesterol among hypertensive middle aged men. To achieve the purpose of the study, thirty (30) hypertensive middle aged men residing in Chennai age between 40 to 50 years were selected randomly two groups, namely experimental group and control group of fifteen (15) subjects each. Training period of this study was twelve weeks. Experimental group underwent yogic practices with varma therapy for twelve (12) weeks, five days a week for a maximum of one hour in the morning. The control group was kept in active rest. The pre test and post test were conducted before and after the training for all two groups. To analyses the data (ANCOVA) test was used to find out the significant difference between experimental group and the control group. The test of significance was fixed as 0.05 level of confidence. It was concluded that significant stabilize in yogic practices with varma therapy than the control group on Increased High Density Lipoprotein (HDL) and decreased Total Cholesterol among hypertensive middle aged men.

KEYWORDS :

INTRODUCTION

High Blood Pressure is generally is known as lifestyle disorders. Therefore, it is essential to bring positive changes in lifestyle, way of thinking and dietary pattern. Adopt natural lifestyle instead of faulty one. Morning and evening walk along with sound sleeping at night is suggested. To a larger extent, sudden and unnatural changes in our daily lifestyle are responsible for high Blood Pressure (BP) or Hypertension. The rapid changes in the standard of living also triggered added disadvantages that lead to diseases like HBP, Obesity, and Heart diseases, Insomnia, Asthma and Diabetes **(Lewington et al 2007).** It is a state in which HDL is above 140 mm Hg and Total Cholesterol above 90 mm Hg. It is in the main arteries which carries oxygenated blood from the heart to the body causes the heart to work too hard and is known as Hypertension **(Swami Karmananda (2010)**. Under and over activity of the genes FGf23, APOC3, TRS1, 9p21 are other cause of HBP. Improper biological clock and insufficient electrical activity are the main causes **(American Heart Association's Council on Hypertension-2017).** Over secretion of vasopressin hormone in the brain causes HBP. It is the leading disease in the world. Every year, 17 May is dedicated to World Hypertension Day (WHD) **(www.who.com)**. Sitting and standing for long periods of time leads to high blood pressure. Metabolically healthy obese persons are also at higher risk of high blood pressure. More than 18 percentages of the Indian men between fifteen years and forty nine years are suffering from hypertension. Salt intake is double and dangerous of Hypertension risk in India (Delhi – 14.13gm/day, Kolkata – 9.81 gm/day, Mumbai – 10.21 mm/day, Bangalore and Chennai 9.38 gm/day) **(Times of India – Dec-17-2016 Sat).** Yogic practices and varma therapy dilate the blood vessels thus reducing pressure, remove excess water and salt from the body, set right sympathetic nervous system to overcome stress, give massaging effect on the arteries, restore elasticity of the nerves, restore bio-rhythm of the body, balance endocrine systems, yogic practices reduce the risk of HBP by 70%. More than four among 10 middle aged people have HBP. It is responsible for 60% of strokes and 40% of heart attacks. Yogic practices and varma therapy helps to promote a balanced development of physical, mental and spiritual wellbeing **(www.yoga point.com).**

STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effect of yogic practices with varma therapy on HDL and Total Cholesterol among hypertensive middle aged men.

HYPOTHESIS

It was hypothesized that there would be significant difference in yogic practices with Varma therapy than the control group on HDL and Total Cholesterol among hypertensive middle aged men.

REVIEW OF RELATED LITERATURE

Dubroff R (2015) studied a Coronary heart disease is the leading cause of death worldwide, and its incidence is rapidly accelerating in developing nations. Patients often search for therapies that are alternatives to traditional treatments, such as heart medicines, coronary bypass surgery, or coronary stenting. Ayurveda is an ancient, East Indian, holistic approach to health care, and its use has never been formally evaluated for patients with coronary heart disease .The study intended to examine the feasibility and effectiveness of comprehensive Ayurvedic therapy incorporating diet, meditation, breathing exercises, yoga, and herbs-for patients with established coronary heart disease. The study was a prospective, single-group, pilot study. The participants were adults with a history of a prior heart attack, coronary bypass surgery, or a coronary intervention (ie, a coronary angioplasty and/or stent). All enrolled patients were evaluated by a single Ayurvedic physician with >40 y of experience and each received therapy consisting of a calorically unrestricted Ayurvedic diet: instruction in yoga, meditation, and breathing: and use of Ayurvedic herbs. The primary endpoint was arterial pulse wave velocity, a marker of arterial function and vascular health. Secondary endpoints included the following measurements: body mass index (BMI), blood pressure (BP) and amount of reduction in BP medications: and (3) levels of total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, and triglycerides. All parameters were measured at baseline and after 90 d of therapy. Twenty-two patients were enrolled in the study, and 19 patients completed it. The research team observed significant improvements in arterial pulse wave velocity ($P = .015$), and favorable reductions in BMI ($P < .0001$), total cholesterol ($P = .028$), LDL cholesterol ($P = .024$), and triglycerides ($P = .046$). HDL cholesterol did not change significantly ($P = .90$). A majority of hypertensive patients were able to reduce or eliminate their antihypertensive medications ($P = .0058$). The study's results suggest a favorable effect for Ayurveda on arterial function and multiple risk factors in patients with established coronary heart disease.

Siu PM et.al., (2015) Metabolic syndrome (MetS) is a

clustering of cardiovascular risk factors, which is associated with diabetes mellitus and cardiovascular disease. Lifestyle interventions applied to people with MetS has considerable beneficial effects on disease preventive outcomes. This study aimed to examine the effects of 1-year of yoga exercise on the cardiovascular risk factors including central obesity, hypertension, dyslipidemia and hyperglycemia in middleaged and older Hong Kong Chinese adults with MetS. Adults diagnosed with MetS using National Cholesterol Education Program criteria (n = 182: mean ± SD age = 56 ± 9.1) were randomly assigned to a 1-year yoga intervention group or control group. Systolic and Total Cholesterol, waist circumference, fasting plasma glucose, triglycerides, and high-density lipoprotein cholesterol were examined at baseline, midway, and on completion of the study. Physical activity level and caloric intake were assessed and included in the covariate analyses. A reduction of the number of diagnostic components for MetS was found to be associated with the yoga intervention. Waist circumference was significantly improved after the 1-year yoga intervention. A trend towards a decrease in HDL was observed following yoga intervention. These results suggest that yoga exercise improves the cardiovascular risk factors including central obesity and blood pressure in middle aged and older adults with MetS. These findings support the complementary beneficial role of yoga in managing MetS.

METHODOLOGY

For the purpose of this random group experimental study, thirty (30) hypertensive middle aged men in Chennai were selected at random as subjects based on their HDL and Total Cholesterol and their age was ranged from 40 to 50 years. Yogic practices with varma therapy were given five days (Monday to Friday) per week for twelve weeks. All the subjects were randomly assigned to experimental group and control group each consisted of 15 subjects. Experimental group was involved in yogic practices with varma therapy for twelve weeks, and the control group kept in active rest. The Yogic practices with varma therapy includes opening prayer, loosening exercises, suryanamaskar, Shavasana, Vrkshasana, Padahastasana, Adhomukha Svanasana, Ardha Halasana, Vipareeta Karani, Shashangasana, Vakrasana, Janu Sirsasana, Paschimottanasana, Ananda Madirasana, Makarasana, Pranayama: Nadhisodhana in siddhasan, Bhramari in vajrasan, Ujjayi in Padmasana, Mudra; Prana and shanti mudra, Relaxation; Ajapa Japa (Yam), Yoga Nidra; End prayer; Varma points; Pitari varmam, Tilarta varmam, murtti kalam, Patchi varmam, Sundi varmam, Kannadi Varmam, Viththu varmam, Aamai varmam, Manibandha varmam, Thuthikai Varmam, Naithalai varmam and kaikotti varmam Techniques. Initially pre-test was taken and after the experimental period of twelve weeks, post-test was taken from two groups. The differences between initial and final HDL and Total Cholesterol variables were considered as the effect of yogic practices with varma therapy on selected subjects. Analysis of Covariance (ANCOVA) test was used to find out the difference among the experimental group and control groups. The test of significance was fixed as 0.05 level of confidence.

RESULTS AND DISCUSSION

The data pertaining to the variables collected from the two groups before and after the training period were statistically analyzed by using Analysis of Covariance (ANCOVA) to determine the significant difference and tested at 0.05 level of significance.

RESULTS ON HDL

The Analysis of Covariance (ANCOVA) on HDL yogic practices with varma therapy and control group was analyzed and are presented in table-I.

RESULTS ON HDL

Table -I

COMPUTATION OF ANALYSIS OF COVARIANCE OF TRAINING GROUP AND CONTROL GROUP ON HDL (in mg/dl)

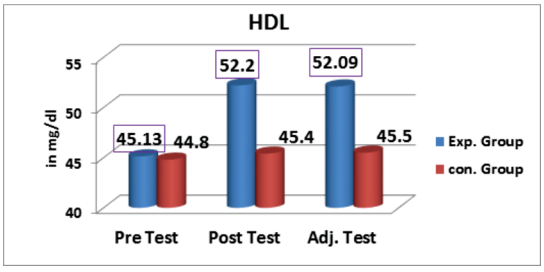
Test	EXP GROUP	CON GROUP	SV	SS	Df	MS	F
Pre test Mean	45.13	44.8	Between	0.83	1	0.83	0.11
			Within	196.13	28	7.00	
Post test Mean	52.2	45.4	Between	346.8	1	173.4	20.57*
			Within	236	28	8.42	
Adjusted test Mean	52.09	45.50	Between	324.12	1	162.06	27.94*
			Within	156.59	27	5.79	
Mean difference	7.06	0.6					

*** Significant at 0.05 level of confidence (Table F ratio at 0.05 level of confidence for df 1 and 28 = 4.20, 1 and 27 = 4.21).**

The obtained F-ratio value for the HDL were greater than the table value, it indicates that there was a significant difference among post test and adjusted post-test means of the yogic practices with varma therapy group than the control group.

The pre-test, post-test and adjusted post-test mean values of yogic practices with varma therapy and the control group on HDL were graphically presented in Figure 1.

Figure 1



*** Significant at 0.05 level of confidence**

RESULTS ON TOTAL CHOLESTEROL

The Analysis of Covariance (ANCOVA) on Total Cholesterol yogic practices with varma therapy and control group was analyzed and presented in table-II.

TABLE-II

COMPUTATION OF ANALYSIS OF COVARIANCE OF TRAINING GROUP AND CONTROL GROUPS ON TOTAL CHOLESTEROL (in mg/dl)

Test	EXP GROUP	CON ROUP	SV	SS	Df	MS	F
Pre test Mean	216.46	216.8	Between	0.83	1	0.83	0.13
			Within	176.13	28	6.29	
Post test Mean	205.53	216.13	Between	842.7	1	421.35	54.25*
			Within	217.46	28	7.76	
Adjusted test Mean	205.63	216.03	Between	806.50	1	403.25	72.38*
			Within	150.42	27	5.57	
Mean difference	10.93	0.66					

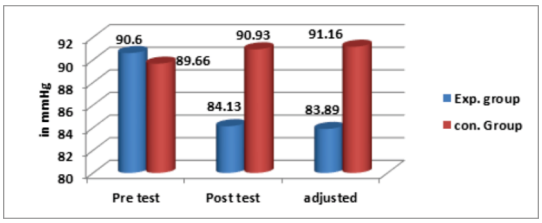
*** Significant at 0.05 level of confidence (Table F ratio at 0.05 level of confidence for df 1 and 28 = 4.20, 1 and 27 = 4.21).**

The obtained F-ratio value for the Total Cholesterol were greater than the table value, it indicates that there was a significant difference among post test and adjusted post-test means of the yogic practices with varma therapy group than the control group.

The pre-test, post-test and adjusted post-test mean values of

yogic practices with varma therapy and the control group on Total Cholesterol were graphically presented in Figure 2.

Figure 2
BAR DIAGRAM SHOWING THE ADJUSTED POST TEST MEANS OF EXPERIMENTAL AND CONTROL GROUPS ON TOTAL CHOLESTEROL (in mmHg)



*** Significant at 0.05 level of confidence**

CONCULSIONS

It was concluded that significant stabilize in yogic practices with varma therapy than the control group on Increased High Density Lipoprotein (HDL) and decreased Total Cholesterol among hypertensive middle aged men.

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