

EFFECT OF YOGA THERAPY ON SELECTED BIO-CHEMICAL VARIABLES AMONG HYPERTENSIVE MIDDLE AGED MEN

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and

ABSTRACT

The purpose of the random group experimental study was to determine the impact of Yoga practices on selected biochemical variables in hypertensive middle-aged men. It was hypothesized that yoga practice would cause significant differences in selected biochemical variables among hypertensive middle-aged men. To achieve the study's goal, thirty subjects were randomly selected from Chennai using a random group sampling design, and their ages ranged only from 40 to 50. They were divided into two groups of 15 subjects each: Group I was experimental, and Group II was the control group. Group I received a suitable planned course of selected yoga practices, while group II served as the control group, receiving no yogic practices but remaining in active rest. Following the 12-week experimental period, a post-test was conducted on selected dependent variables in both groups. The collected data was statistically analyzed using Analysis of Covariance (ANCOVA) to determine the significant differences between the experimental and control groups. The significance test was set at a confidence level of 0.05. It was concluded that among hypertensive middle-aged men, Yoga practices resulted in significant differences in selected biochemical variables, with HDL significantly increasing and LDL significantly decreasing compared to the control group. As a result, the hypothesis was accepted with a confidence level of 0.05. It has been concluded that yoga is beneficial for hypertensive middle-aged men.

KEYWORDS: *Yoga , hypertensive middle aged Men, LDL and HDL*

INTRODUCTION

An abnormal blood pressure must be confirmed on two consecutive days. The ideal blood pressure is less than 120/80 mmHg. High blood pressure, also known as hypertension, is defined as a systolic blood pressure of 140 mmHg or a diastolic blood pressure of 90 mmHg or higher. Systolic blood pressure is a better predictor of cardiovascular events than diastolic pressure. As people age, diastolic blood pressure may decrease while systolic blood pressure rises, indicating increased stiffening of the arteries throughout the body.

However, long-term high blood pressure is a significant risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss, and chronic kidney disease.

Hypertension becomes more common as people get older, particularly among the middle-aged. In 2008, the global prevalence of raised blood pressure in adults aged 25 and up was around 40%. In the United States, approximately 75 million adults (29%) have high blood pressure, accounting for one out of every three adults. Hypertension is likely to become an epidemic in the near future, with roughly one-third of the population suffering from it by 2020.

Yoga can be an extremely effective natural therapy for managing and lowering high blood pressure. Yoga's gentle, soothing practice relaxes both the mind and the body while also reducing stress, which is a major cause of hypertension. You can assist in activating the parasympathetic nervous system, which is in charge of rest and repair, while deactivating the sympathetic nervous system, which is responsible for the fight-or-flight stress response. Increased parasympathetic activity benefits many body systems and helps to balance the nervous system. This is one way that practicing yoga for high blood pressure can help activate the body's natural healing response, allowing blood pressure to drop naturally.

Symptoms

Severe headache, fatigue, or confusion. Visual issues, Chest Pain, Difficulties breathing, irregular heartbeat Blood in the urine. Pounding in the chest, neck, or ears.

Causes

Smoking, being overweight or obese. Lack of physical activity. Too much salt in your diet, Excessive alcohol consumption (more than one or two drinks per day), Stress, Older age, Genetics.

Complications of hypertension

Heart attack or stroke Aneurysm, Cardiac failure Weakened and narrowed blood vessels in your kidneys. Blood vessels in the eyes are thickened, narrowed, or torn. Metabolic Syndrome Problems with memory or understanding. Dementia

Objectives of the Study

The study's goal was to determine whether Yoga would have a significant effect on selected biochemical variables in middle-aged hypertensive men.

Statement of the problem

The study sought to determine the effect of yoga on selected biochemical variables in hypertensive middle-aged men.

Hypothesis

It was hypothesized that Yoga would produce significant differences in selected biochemical variables among hypertensive middle-aged men compared to the control group.

REVIEW OF RELATED LITERATURE

A thorough review of relevant literature is required to gain a comprehensive understanding of what has been done and said about the problem under consideration.

Yogaraj P et.al., (2010) The effect of selected yogic practices and physical exercises on biochemical variables among male college students was discovered. The study included 20 male students from Queen Mary's College in Chennai, Tamil Nadu, as subjects. The selected subjects were divided into two groups. Group I received yogic practice training, while Group II received physical exercise instruction. The subject's age ranged from 18 to 23 years. The subjects were chosen at random from the college's male students. The study followed a pre-post and pre-experimental design. The yogic practice group experienced significant improvements in body cholesterol, triglycerides, HDL, and LDL. Yogic practices, physical exercise, cholesterol, and high density are all related terms.

Anki Reddy (2018), Yoga therapy was found to be effective in improving selected biochemical variables in middle-aged hypertensive men. To facilitate the study, 30 subjects were randomly selected from the Godhavari District. Their age ranged from 30 to 45 years old. They were divided into two groups: yoga therapy and control group. All subjects were tested before and after the six-week treatment period for biochemical variables such as low density lipoprotein (LDL) and cholesterol. The initial and final scores in selected biochemical variables were statistically analyzed using Analysis of Covariance (ANCOVA) to determine significant mean differences. Systematic six-week yoga therapy reduced LDL and cholesterol levels more than the control group.

METHODOLOGY

The methods and procedures used to investigate the effect of yoga on selected biochemical variables among hypertensive middle-aged men in Chennai aged 40 to 50 years. This chapter provides information on subject selection, experimental design, instrument reliability, variable orientation, tester reliability, test administration, and statistical techniques used for data analysis. Based on previous references, HDL and LDL were chosen as biochemical variables for the study. The experimental group had their HDL and LDL levels tested beforehand. In this study, the experimental group received yoga therapy (asanas, pranayama, and relaxation) five days a week for twelve weeks.

Every day, one hour of training was dedicated to yogic practices, followed by one hour of relaxation techniques. Aside from their regular activities, the control group did not engage in any special training programs or strenuous physical activities.

DEPENDENT VARIABLES

Standard tests were used to measure biochemical variables such as high-density lipoprotein (HDL) and low-density lipoproteins (LDL).

INDEPENDENT VARIABLES

Yoga was taught 5 days a week for 12 weeks. Each day, one hour of practice was given.

RESULTS AND DISCUSSIONS

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

RESULTS ON HIGH-DENSITY LIPOPROTEIN

The Analysis of Covariance (ANCOVA) on High-Density Lipoprotein among Yoga and control groups was conducted, and the results are presented in Table I.

TABLE I
ANALYSIS OF COVARIANCE OF THE MEANS OF TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUP ON HIGH-DENSITY LIPOPROTEIN (in mg/dL)

Test	Experimental group	Control group	Source of Variation	Degrees of Freedom	Sum of Squares	Mean Sum of Squares	F-Ratio
Pre	83.33	6.00	Between	1	5.33	53.33	1.15
			Within	28	293.33	46.19	
Post	107.00	2.67	Between	1	440.83	440.83	62.69*
			Within	28	983.33	70.83	
Adjusted Post	107.50	2.17	Between	1	622.71	622.71	69.28*
			Within	27	801.46	66.72	

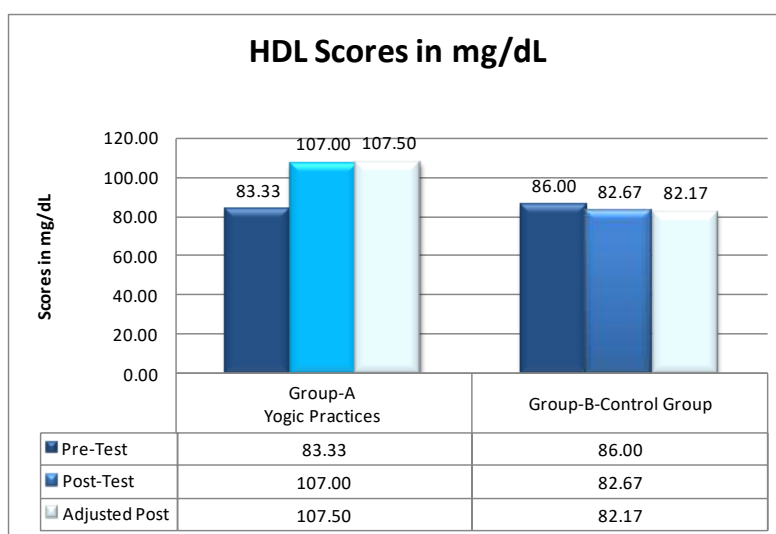
* Significant at 0.05 level of confidence. (Table F ratio at 0.05 level, of confidence for df 1)

and 28= 4.2, 1 and 27= 4.21)

The obtained F-ratio value for the HDL exceeded the table value. This indicates that the Yoga group's post-test and adjusted post-test means differed significantly from the Control group's HDL levels. Expert observations can support the above findings. Yogaraj P. et al. (2010). The pretest, posttest, and adjusted posttest mean HDL values for the Experimental and Control groups are graphically presented in the table below.

Figure – 1

BAR DIAGRAM SHOWING THE MEAN DIFFERENCES AMONG THE GROUPS ON HDL (mg/dl)



* Significant at 0.05 level of confidence

RESULTS ON LDL

TABLE II

ANALYSIS OF COVARIANCE OF THE MEANS OF TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUP ON LDL (mg/dl)

Test	T Experimental group	E Control group	C Group	S Source of Variation	De grees of Freedom	S um of Squares	Mea n Sum of Squares	F- Ratio
Pre	P 16.07	1	1	B etween	1	1 68.03	168. 03	1.0 2

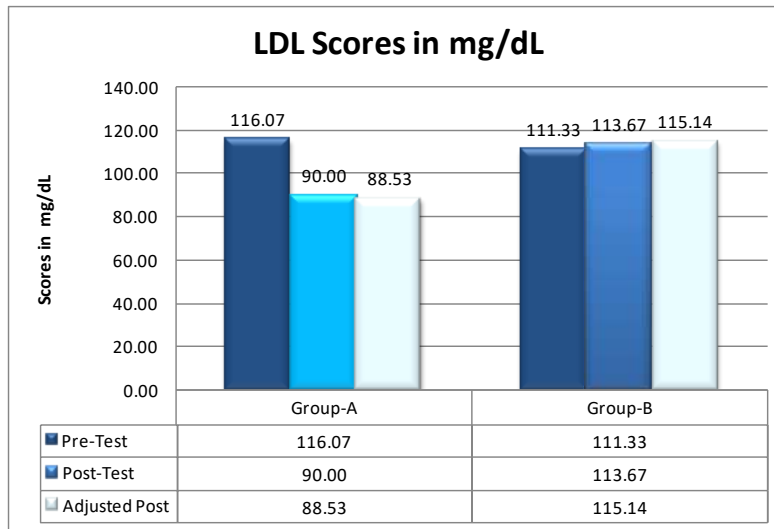
			W	28	4	164.	
			ithin		602.27	37	
P	9	1	B	1	4	4200	36.
ost	0.00	13.67	etween		200.83	.83	
			W	28	3	115.	49*
			ithin		223.33	12	
A	8	1	B	1	5	5123	95.
djusted			etween		123.56	.56	
Post	8.53	15.14	W	27	1	53.4	80*
			ithin		443.96	8	

*** Significant at 0.05 level of confidence.(Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21)**

The obtained F-ratio value for the LDL was higher than the table value. This suggests that there was a significant difference in the post-test and adjusted post-test means of the Simplified physical exercises group versus the control group for LDL. Expert observations can support the above findings. Anki Reddy, (2018) The pretest, posttest, and adjusted posttest mean LDL values for the Experimental and Control groups are graphically presented in the table below. Figure 2 depicts the ordered adjusted means on LDL in the form of a bar diagram to help readers understand the study's findings.

Figure 2

BAR DIAGRAM SHOWING THE MEAN DIFFERENCES AMONG THE GROUPS ON LDL(mg/dl)



*** Significant at 0.05 level of confidence**

CONCLUSION

It was determined that among middle-aged men with hypertension, yoga raised HDL and decreased LDL in the experimental group compared to the control group.

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