Impact of Yogic Practices and Aerobic Training on Low Density Lipoproteins among Middle Aged Women

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Abstract: *Health is considered as the result of good health and adequate follow-up in this direction. Physical well-being has been strongly emphasized among all the dimensions of well-being and human health. The aim of the study is to understand the impact of yogic practices group and aerobic training on low density lipoprotein among middle-aged women. To achieve this goal the study, 45 middle-aged women as teachers from different schools in Ananthapuramu, Andhra Pradesh were selected and their age ranged from 35 to 45 years of low-density lipoprotein (LDL) cholesterol was selected as a dependent variable in the study. The 45 selected middle-aged women were separated into three equal groups, the experimental group - 1 (n = 15) YPG was subjected to a yoga practices group, the experimental group - 2 (n = 15 ATG) aerobic training group and -3 (n = 15, CG) served as a control group. In the study, two different training approaches were used as independent variables, i.e. yogic practices (YPG) and aerobic training (ATG). Lipid blood profiles, i.e. low density lipoproteins, have been chosen as dependent variables. It was measured with blood samples; the unit of measurement was in milligrams / deciles. The random group design was used before and after the test. ANCOVA was used to determine the adjusted post test means difference after significantly controlled three groups for low-density lipoproteins and Scheffe's post hoc test was used to compare couples among groups as far as concerns lipid profiles in the blood. It was concluded that the low-density lipoprotein level significantly increased during twelve-week training for yogic practices and aerobic training groups was significant. It is clear that the aerobic training group responded to the formation with more positive influences of low-density lipoprotein than the yogic practice group and the control group. The yogic practices group responded better than the control group.*

Key Words: *Health, Yogic Practices, Aerobic Training, Low Density Lipoprotein.*

1. INTRODUCTION:

The word 'yoga' comes from 'yuj' in sanskrit, which means 'unity' or 'Yoke' the relative meaning is to concentrate attention or 'use'. 'Asana' is one of the most significant tools of yoga helping to position the body in various positions with the total participation of the mind and self to establish communication between our inner and outer self (Iyengar, 2001). Yoga practices assume a critical part in the support of human systems. Yoga perfect builds up the body as well as produces intellectual capacities. Moreover, yogis procure dominance of the involuntary muscles of their body (A.M. Moorthy and J. David Manual Raju, 1983). In this study we try to discover the effects of aerobic dance and yogic practice on blood lipid profiles among university students. Yoga provides techniques (physically, mentally, intellectually and emotionally) for this growth. These techniques are also therapeutically useful for many of the stress-related problems. Sound health is an adjusted advancement of a person's identity and enthusiastic dispositions, empowering him to live in harmony with his condition. It is only a great adjustment to the biological balance in our body and this can be achieved by doing yogic practices and exercises: "Yoga has a total message for mankind, has a message for the human body, has a message for the human personality and has a message for the human soul." -Swami Kuvalayananda 2 regulates the dietary model and has a positive attitude toward ourselves and the environment (Murthy, 1983).

Yoga is an ancient form of relaxation and exercise that has many health benefits, including cholesterol reduction. Pranayama likewise associates the body to its battery, the solar plexus, where it stores massive potential vitality. At the point when utilized with particular systems, this imperative vitality, or prana, is discharged for physical, mental and spiritual revival. Normal practice eliminates with obstructs that keep the stream of essential vitality. At the point when cells work in order, they reestablish harmony and wellbeing to the system. 20 to 25 minutes (every morning or 17 evening) Pranayama practice increases lung capacity, respiratory, circulation, cardiovascular efficacy, helps normalize blood pressure, tone and strengthen the nervous system, combat anxiety and depression, improves sleep functions, digestion and excretion, providing massage to the internal organs, stimulating the glands, improving endocrine function, normalizing body weight, provide great weight loss conditioning, improved skin tone and complexion. (Sugumar and Raghavan, 2010)

As a psychological body practice, the organic instrument of yoga presumably has more parts. As a physical action, some portion of the impact is identified with extra sorts of activity. By and large, yoga is thought to be a low or direct force work out. Exercise is notable to enhance health by enhancing cardiovascular capacity, muscle strength and respiratory adaptation, modify metabolism and functions of immune. The accentuation on yoga on unwinding in static and dynamic activities recognizes it from regular exercise. By deliberately contracting and unwinding muscles in facilitated groupings, changing examples of breathing and developing mental awareness and mindfulness for the duration of training, yoga endeavors to synchronize the body and mind. Yoga practice requires active participation of subjects. Therefore, it can be expected that the effects of factors such as yoga motivation, as well as subject age and sex influence the results. This is attractive to study since yoga training is progressively included as a feature of routine projects a large variety of diagnoses ranging from "major depression or some other type of diagnosed depression" to "elevated depressive symptoms" (L. A. Uebelacker, 2010). The purpose of physical fitness is to create awareness and enthusiasm among people and stimulate their interest in physical well-being, which in turn will help them lead a healthier life. Physical fitness should also consider factors such as speed, strength, endurance and agility that make a person physically efficient (Rober V. Hockey, 1993).

Aerobic training is a popular exercise mode to improve and maintain cardiorespiratory fitness. A typical aerobic workout consists of 8 to 10 minutes of exercise stretching, calisthenics and low intensity. This is followed by 15 to 45 minutes of aerobic dance with high or low impact on target training intensity, (Vivian H. Hayward, 1989). Aerobic training is an intense and oxygenated muscle exercise that stimulates the activity of the heart and lungs in a given period of time to produce beneficial changes in the cardiovascular system. The main objective of aerobic dance, like any other form of aerobic exercise, is to build the most extreme measure of oxygen the body can process over a given timeframe. Aerobic effect depends on the body's ability to quickly breathe large amounts of air, manage large volumes of blood and oxygen to effectively handle all parts of the body (Sharonkay Stoll and Jennifer Marie Beller, 1989).

According to Bucher (1993), aerobic exercise is any physical activity that requires that the heart rate reaches at least 60% of the maximum heart rate for a long period of time. It is also an activity that can be sustained for a long time without developing an oxygen deficit. Mitchell and Daka's (1980) aerobic exercises refer to a variety of activities such as walking, jogging, and running for a measured time. This is sufficient for a short distance runner, but in a short time helps to produce beneficial changes in the body, especially in the lungs, heart and blood circulation. A typical aerobic workout consists of 8 to 10 minutes of stretching, calisthenics and low intensity exercise. This is followed by 15 to 45 minutes of high or low aerobic dance impact according to the intensity of target training. Heart rate should be controlled at least 6 times during exercise to ensure that the heart rate is maintained within the target area. The 10-minute cooling don period typically includes multiple stretching and callisthenic exercises (Hayward, 1989). Low-density lipoprotein (LDL) can store cholesterol in the artery walls, which decreases blood flow and is consider as "bad" cholesterol (Durstine et al., 2001).

2. METHODOLOGY:

The current examination was to discover the impact of yogic practices and aerobic training on low density lipoprotein (LDL) among middle-aged women. To get the reason for this research, 45 middle-aged women were randomly chosen as subjects. Their age was 35 and 45 years. Subjects were teachers of various schools in Ananthapuramu, Andhra Pradesh, India and, consequently, there was no distinction in the patterns of daily life, and was later well thought out as a standardized group. They chose isolated subjects in 2 experimental groups and one control group with 15 subjects in each (n = 15). Experimental Group I (YPG) undergoes yoga practices, Group II (ATG) is subjected to an aerobic group and Group III serves as a control group (CG) during the 12-week training period. The subjects of the control group were unable to attend any of the training programs except their standard exercises. Among the various biochemical variables, low density lipoprotein (LDL) was chosen as dependent variables for the test.

During the training period, experimental groups have undergone a specific training program three days a week on twelve-week alternate days, despite normal daily work. Before the start of the experiment and in the middle of the training period (after the 6th week), the investigator recorded the target heart rate tests for the subjects of the training group. Information on the dependent variable chosen for the previous and subsequent trials was collected two days before and two days after the training program, respectively.

Information on low density lipoprotein (LDL) was evaluated by the calorimetric enzyme method with blood samples collected by each subject. Fasting blood samples were taken from each subject in the morning to evaluate low density lipoprotein (LDL) and evaluated at the Care Diagnostic Center, Ananthapuramu, Andhra Pradesh, India. The information gathered from the three groups already; at that point after experimental period was statistically analyze to decide the significance power for analysis covariance (ANCOVA). At any time when F ratio began to be significant, the Scheffe test was used as a post-hoc test to find out which of the coupled means differs significantly. In all cases, the statistical significance criterion was set to 0.05 confidence level ($P < 0.05$).

3. RESULTS:

The impact of independent variables (yogic practices and aerobic training) on low density lipoprotein (LDL) was determined by subjecting the data collected using appropriate statistical techniques and the results are reported below.

The analysis of covariance in obtaining data for the low-density lipoprotein (LDL) pre test, post-test and adjusted post-test of yogic practices, aerobic training, and control group is given in Table I.

Table I. Analysis of covariance for the pre test, post test and adjusted post test data on low density lipoprotein of yogic practices, aerobic training and control groups

Tests / Groups		Yogic practices group	Aerobic Training Group	Control Group	SOV	Sum of Squares	df	Mean Squares	F ratio
Pre Test	$\bar{x}$	119.83	119.62	119.94	B	1.04	2	0.51	0.00
	σ	9.27	10.40	12.4	W	7072.65	57	124.06	
Post Test	$\bar{x}$	114.20	113.01	119.49	B	475.92	2	237.95	2.27
	σ	8.69	8.45	12.23	W	5955.49	57	104.46	
Adjusted Post Test	$\bar{x}$	114.17	113.14	119.2	B	447.11	2	223.55	6.83*
					W	1830.00	56	32.66	

*Significant at 0.05 level of confidence.
SOV: Source of Variance; B: Between, W: within
(The Table value for significance at 0.05 level with df 2 and 57 and 2 and 56 are 3.14 and 3.15 respectively)

The statistical analysis of the above table shows that the pre-test test facilities of the yogic practice group, aerobic training group and control group are 119.83, 119.62 and 119.94 correspondingly. The F ratio of 0.00 for the pretest test is less than the table value of 3.14 for df 2 and 57 required for the meaning at 0.05. The means for post testing of the yogic practice group, aerobic training group and control group are 114.20, 113.01 and 119.49, correspondingly. They get F ratio of 2.27 for subsequent tests is lower than the table value of 3.14 for df 2 and 57 required for significant at 0.05 level. The adjusted post means of yoga practice group, the aerobic training group and the control group are 114.17, 113.14 and 119.2 respectively. The F ratio obtained for the rearranged 6.83 adjusted post test is greater than the table value of 3.15 for df 2 and 56 required for significant at 0.05.

The past investigation of the research demonstrates that there is a significance contrast in implications between the adjusted post test for the Yogic Practice Group, the aerobic training group and the control group. Furthermore, to figure out which of the three paired means had a significance distinction, Scheffe post hoc test was applied as and the outcomes are presented in Table II.

Table ii. Scheffe's Post hoc test for differences between the adjusted post test paired means of low density lipoprotein

Adjusted Post Test Means			Mean Differences	F Value
Yogic practices group	Aerobic Training Group	Control Group		
114.18	113.15	--	1.03	2.87
114.18	--	119.3	5.12	73.75*
--	113.15	119.3	6.15	105.79*

* Significant at 0.05 level.
Table F (0.05) = 6.32

From the table above we can see that the average contrasts between the yogic practice group, the aerobic training group were 1.03 (P> 0.05) and the calculated F value was 2.87 (P> 0.05). The average difference between the

yogic practice group and the control group was 5.12 (P> 0.05) and the calculated F value was 73.75 (P> 0.05). The mean contrast between the aerobic training group and the control group was 6.15 (P <0.05) and the calculated F value was 105.79 (P <0.05). From this it can be seen that the aerobic training group responded to the formation with a more positive influence of low-density lipoprotein than the yogic practices group and control group. The yogic practice group responds best to the control group.

The pre test, the post test, and the adjusted post test means values of the yogic practice group, aerobic training group and control group on low density lipoprotein are presented graphically in figure I.

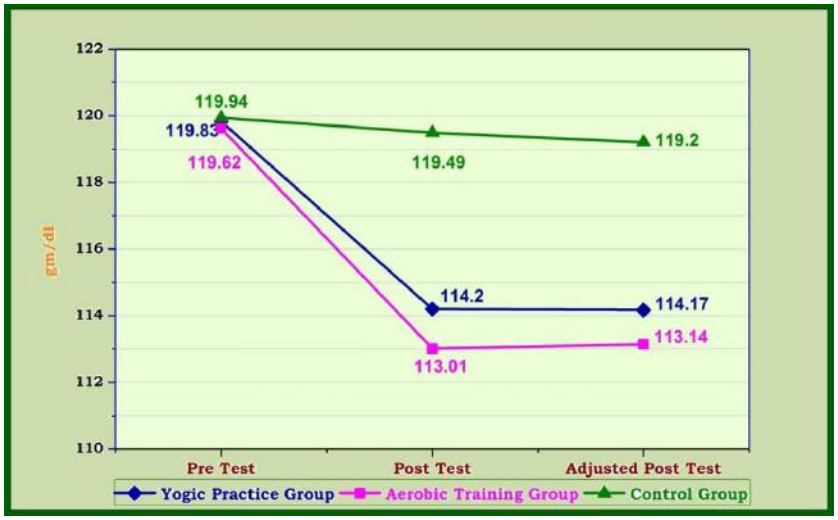

Figure I : Line Graph Showing Pre Test, Post Test And Adjusted Post Test Means Of Yogic Practices Group, Aerobic Training Group And Control Group On Low Density Lipoprotein.

4. CONCLUSIONS:

In the present study, because of two training programs, to be specific, yogic practices and aerobic training, the accompanying enhancements occurred on low density lipoprotein of middle aged women.

- It was concluded from the outcomes of the investigation that the two experimental groups, to be specific, yogic practices group (YPG) and aerobic training group (ATG) have accomplished significant changes when compared with control group (CG) towards enhancing low density lipoprotein.
- It is concluded that aerobic training group found to be superior to anything the yogic practice group in positive the low density lipoprotein.

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