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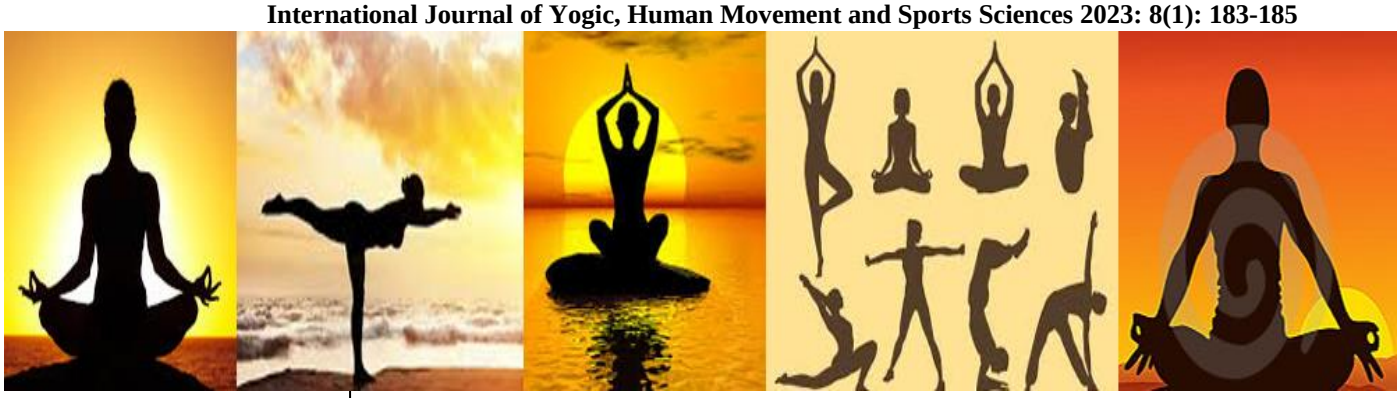

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A comparative effect of yogic practices and brisk walking on low density lipoprotein of middle aged men

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Abstract
The objective of this study was to determine the comparative effect of yogic practices and brisk walking on low density lipoprotein of middle aged men. The subjects for this study were sedentary male from Gwalior. Total of ninety male subjects were selected and used as two experimental groups (30 subjects each) and control group (30 subjects). Yogic practices and brisk walking were considered the independent variables and low-density lipoprotein was considered as the dependent variable. 2 ml of blood in plain vial was taken as the criterion measures. Training was given for twelve weeks with each session of 45 minutes. The Pre Test- Post Test randomized group design was used for this study. Tests were administered before the training program and after the completion of the treatment again test were administered. ANCOVA was used to locate significant effects of yogic practices and brisk walking on low density lipoprotein at 0.05 levels of significance. In relation to low density lipoprotein, brisk walking group was found to be better in decreasing the low density lipoprotein level in blood than yogic practices group.

Keywords: Brisk walking, yogic practices and low density lipoprotein

Introduction
Lipoproteins are the cholesterol which flows through blood in form proteins and there are two types of lipoproteins which carry cholesterol towards and from cells, such as low-density lipoprotein (LDL) and high-density lipoprotein (HDL). LDL is recognized as the 'bad' cholesterol as it is responsible for fat buildups in arteries (atherosclerosis), which means passage of the arteries narrows thus increasing the risk for heart attack, stroke and peripheral artery disease (PAD).

Yoga is aprimordial mind-body discipline that originated in India. A combination of Kriyas, pranayama, asanas, and, Meditation yoga has been used for centuries in Ayurveda to treat a variety of medical conditions. Yoga plays extremely effective role in reducing stress which further decreases the risk factors of heart related diseases which includes stress reduction.

For reducing the level of stress yoga is found to be one of the effective ways as reducing the stress aids in lowering the risk for cardiac cholesterol conditions. Research studies revealed that regular practice of yoga for cholesterol issues also shoed major reduction in weight reduction. As reducing weight lowers blood-fat levels as well, thus it can be said that the reduction in weight by practicing weight lowers the cholesterol and triglycerides also.

On the other hand, brisk walking is a form of moderate intensity exercise as it has numerous advantages on fitness and reducing health risks than walking in a slow pace. Studies showed that brisk walking is one of the easiest and most effective cardio workouts helping to lower the risk of heart diseases if practiced for five days a week. It is one of the easiest and most effective cardio workouts. According to many research studies, walking 5 days a week can help lower our risk for heart disease. Consistent cardio exercise assists in lowering the levels of LDL (bad) cholesterol in blood. Therefore, this study was conducted on a comparative effect of yogic practices and brisk walking on low density lipoprotein of middle aged men.

Methods

Selection of Subjects: Total ninety sedentary male individuals with their age ranging between 40-50 years from Gwalior, M.P. were selected at random as subject of the study and were divided in to three groups of 30 subjects each. All subjects were almost from the same socio-economic group and were found to be physically fit for the type of programme they were selected.

Selection of Variable: Keeping in mind the specific point of the study to find out the effect of selected yogic practices and brisk walking on low density lipoprotein was considered as the variable of the study and was measured by 2 ml of blood in plain vial.

Experimental Design: Pre-test and post-test randomized group design was employed where the subjects were divided into two experimental groups and a control group. The experimental group was imparted training of five days in week and each session scheduled for 45 minutes yogic training and brisk walking under the supervision and guidance of the researchers.

Training and practice of yogic intervention strategies: The training of experimentation group one that is yogic practices was given in the Yoga hall of IPS College, Gwalior and experiment group two was given Brisk Walking at Jiwaji University, Gwalior. The practice session was conducted for a period of 45 minutes in the morning from 7.00 am. to 7.45 am on Monday to Friday for a duration of twelve week.

Statistical Procedure: To find out the effect of yogic practices and brisk walking on low density lipoprotein of middle aged men, mean, ANOVA and ANCOVA was used and tested at 0.05 level of significance.

Results

Table 1: Descriptive Statistics of the Groups in the factor of Low Density Lipoprotein

Groups	Test	N	Mean	SD
A (YP)	Pre	30	105.70	37.55
	Post	30	85.73	32.11
B (BW)	Pre	30	122.50	26.01
	Post	30	95.40	23.56
C (Control)	Pre	30	116.20	29.21
	Post	30	117.25	27.84

SD: Standard Deviation **SEM:** Standard Error of Mean
Min.: Minimum **Max.:** Maximum
Var.: Variance **YP:** Yogic Practices
BW: Brisk Walking **mg:** Milligram

Table 1 depicts the descriptive statistics for low density lipoprotein of all the three groups for twelve week of time duration (pre-post test). The mean and standard deviation of group A (Yogic Practices) was 105.70 ± 37.55 mg (pre test) and 85.73 ± 32.11 mg (post test). The mean and standard deviation of group B (Brisk Walking) was 122.50 ± 26.01 mg (pre test) and 95.40 ± 23.56 mg (post test). The mean and standard deviation of group C (Control) was 116.20 ± 29.21 mg (pre test) and 117.25 ± 27.84 mg (post test). Graphical representations of the mean scores in the variable of low density lipoprotein presented in Figure 1.

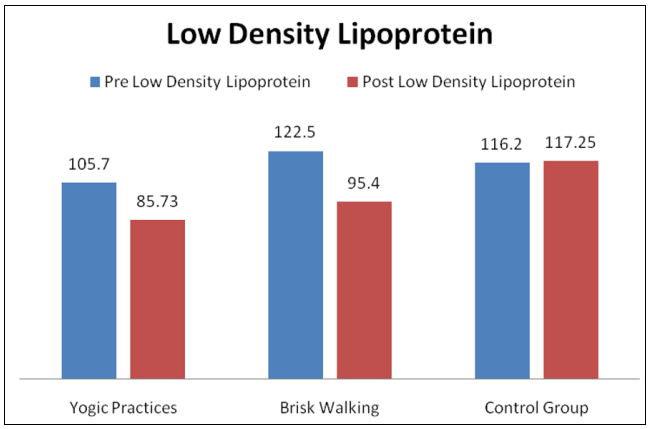

Fig 1: Means Scores of the groups in the factor of Low Density Lipoprotein

Table 2: Comparison among the Various Groups on the Factor of Low Density Lipoprotein

		Sum of Squares	df	Mean Square	F-Value	Sig
Pre Test	Between Groups	4319.91	2	2159.95	2.20	0.11
	Within Groups	85290.11	87	980.34		
Post Test	Between Groups	15648.38	2	7824.95	9.93*	0.00
	Within Groups	68492.82	87	787.27		

*Significant at 0.05 level of significance f (0.05) (2, 87) =3.09

In relation to pre test, table 2 reveals that the obtained 'F' value of 2.20 was found to be insignificant at 0.05 level, in biochemical parameter of low-density lipoprotein since this value was found lower than the tabulated value 3.09 at 2,87 df.

In relation to post test, significant differences were found among experimental groups and control group pertaining to low density lipoprotein, since 'F' value of 9.93 was found significant at 0.05 level.

Table 3: Univariate Analysis on the factor of Low Density Lipoprotein

	Sum of Squares	df	Mean Square	F-Value
Contrast	12726.24	2	6363.12	146.79*
Error	3727.75	87	43.346	

*Significant at 0.05 level of significance f (0.05) (2, 87) =3.09

Table 3 reveals the analysis of co-variance which was calculated to find out the impact of twelve week of training on selected groups in the biochemical parameter of low density lipoprotein. It revealed that the obtained 'F' value 146.79 was found significant when tested at 0.05 level of significance as calculated f value was found higher than the tabulated value 3.09 at 2, 87 df. Further LSD Post Hoc Test was applied to find out differences between groups.

Table 4: LSD Post Hoc Comparison of Adjusted Post Test Mean Scores of Low Density Lipoprotein among Experimental and Control Groups

Group A	Group B	Group C	Mean Difference	Critical Difference
93.66	88.69		4.96*	14.48
93.66		116.03	22.37*	14.48
	88.69	116.03	27.34*	14.48

Table 4 shows adjusted post test means of two experimental groups and one control group. The adjusted means of experimental group A, experimental group B and control group C were 93.66, 88.69 and 116.03 respectively. The mean differences between experimental group A and experimental group B and control group C were (4.96, 22.37) while the mean differences between experimental group B and control group C are (27.34). Hence, there was significant differences obtained among control Group C and experimental group A and B at 0.05 level and there was significant difference between experimental group A and experimental group B tested at 0.05 level.

Discussion

The findings of this study demonstrate that twelve weeks yogic practices and brisk walking training have significant effect on low density lipoprotein. However, the study had some limitation such as small sample size and short yogic practices and brisk walking training period. The result of the study on low density lipoprotein shows that the experimental groups (yogic practices & brisk walking) brought about significant improvement after the training. The results of the study also indicated that there was a significant difference on low density lipoprotein between the yogic practices and control group and brisk walking and control group after twelve week training. However brisk walking group was found to be better in decreasing the low density lipoprotein level in blood than yogic practices group.

Conclusion

The result of the study indicated that there was significant difference in low density lipoprotein between the yogic practices group and control group and brisk walking group and control group after twelve week training. Brisk walking group was found to be better in decreasing the very low density lipoprotein level in blood than brisk walking group.

References

1. Arya Sandhya & Parimal Devnath. Yoga Education, NCTE New Delhi; c2015. p. 102-105.
2. Ben ounis O, *et al*. Effect of Two Month Physical Endurance and Diet Restriction Programmes on Lipid Profiles and Insulin Resistance in Obese Adolescent Boys. Science Direct Online Journal. 2008;34:595-600.
3. Chaudhary S. The Effects of Aerobic Versus Resistance Training on Cardiovascular Fitness in Obese Sedentary Females, Asian Journal of Sports Medicine. 2009;1(4):177-184.
4. Gordon, Jackson. A family Guide to Fitness and Exercise. London: Salammander Books Limited; c1985. p. 41.
5. Hardman Adrianne E, *et al*. Brisk Walking and Serum Lipid and Lipoprotein Variables in Previously Sedentary Women Effect of 12 Weeks of Regular Brisk Walking Followed by 12 Weeks of Detraining. Br J Sp Med. 1994;28(4).
6. Kumar Mahesh. International Journal of Yogic, Human Movement and Sports Sciences. 2017;2(2):206-208.
7. Manchanda SC, others. Retardation of Coronary Atherosclerosis with Yoga Lifestyle Intervention, Journal of the Association of Physicians of India. 2000;48(7):687-694.
8. Manivannan L, *et al*. Impact of Yogic Practices and Brisk Walking on Lipid Profiles among Hypertensive Men, European Journal of Biomedical and Pharmaceutical sciences. 2016;3(3):328-332.
9. Mahajan AS, *et al*. Lipid Profile of Coronary Risk Subjects Following Yogic Lifestyle Intervention, Indian Heart Journal. 1999;51(1):37-40.
10. Prasad G, Bhardwaj I. Effect of Comprehensive Yogic Practices on Lipid Profile of Urban Population. International Journal of Science and Consciousness. 2017;3(2):24-28.