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INFLUENCE OF YOGA WITH VARIED FORMS OF AEROBIC EXERCISES ON LIPID PROFILES AMONG OVERWEIGHT SCHOOL BOYS

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Abstract:

The purpose of the study was to find out the influence of yoga with varied forms of aerobic exercises on lipid profiles among overweight school boys. To achieve the purpose of the present study, sixty overweight school boys from Madurai district, Tamilnadu were selected as subjects at random and their ages ranged from 14 to 17 years. The subjects were divided into three equal groups of twenty overweight school boys each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The groups were assigned as yoga with floor exercises, yoga with step exercises and control group in an equivalent manner. The experimental group participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Analysis of covariance and scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses. The yoga with floor exercises group had shown significant improvement in all the selected lipid profiles among overweight school boys. The yoga with step exercises group had shown significant improvement in all the selected lipid profiles among overweight school boys.

Key Words: Yoga, Step Aerobics, Floor Aerobics, Lipid & Overweight School Boys

Introduction:

The focus of today's yoga is more on practical benefits. There is a definite difference between yoga, stretching and normal exercise. Yoga teaches the concept of focusing awareness while performing specific postures. The benefits of yoga are numerous, including improved physical fitness, stress control, general well-being, mental clarity and greater self-understanding (Chandrasekaran, 2003). Step aerobics form of aerobics exercise distinguished from other types of aerobic exercise by its use of an elevated platform. The height can be tailored to individual needs by inserting risers under the step. Step aerobics classes are offered at many gyms and fitness centers which have a group exercise program. Step aerobics helps burn calories. The number of calories burned depends on the speed of movements, step height and length of exercise time. Step aerobics provides endurance training, which helps maintain the health of the cardiovascular system. The strength training component of step aerobics helps to improve gait and balance. Step aerobics provides flexibility that enhances joint movements. Step aerobics has a positive impact on mental health as well. Since the workout is fun and enjoyable, it can help to release stress. If the workout is done in a group, the exercise session can create social contacts with others. Lastly, step aerobics is suitable for all ages, less expensive. Floor aerobics are a kind of aerobics that are generally performed using no equipment whatsoever. While water aerobics require the use of belts and floating resistance devices, kickboxing aerobics requires a punching bag and gloves, and step aerobics requires a step aerobics bench, floor aerobics really only requires a firm, steady surface on which to practice the moves. In other words, the only piece of equipment needed to perform floor aerobics is a floor (Stoll & Jennifer, 1989).

Methodology:

The purpose of the study was to find out the influence of yoga with varied forms of aerobic exercises on lipid profiles among overweight school boys. To achieve the purpose of the present study, sixty overweight school boys from Madurai district, Tamilnadu were selected as subjects at random and their ages ranged from 14 to 17 years. The subjects were divided into three equal groups of twenty overweight school boys each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The groups were assigned as yoga with floor exercises, yoga with step exercises and control group in an equivalent manner. The experimental group participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Analysis of covariance and scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses.

Table 1: Variables and Test Items

S.No	Variables	Tests
1	HDL	Lab Test
2	LDL	Lab Test

Results:

Table 2: Computation of Analysis of Covariance of Mean of Yoga with Floor Aerobics, Yoga with Step Aerobics and Control Groups on High Density Lipoprotein

	YWFAG	YWSAG	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	64.88	64.78	63.37	**BG**	17.21	2	8.60	2.17
				WG	225.25	57	3.95	
Post-Test Means	71.13	72.73	64.70	**BG**	551.38	2	275.69	89.04*
				WG	176.47	57	3.095	
Adjusted Post-Test Means	71.14	72.74	64.71	**BG**	522.58	2	261.29	85.46*
				WG	171.21	56	3.05	

An examination of table 2 indicated that the pretest means of yoga with floor aerobics, yoga with step aerobics and control groups were 64.88, 64.78 and 63.37 respectively. The obtained F-ratio for the pre-test was 2.17 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the yoga with floor aerobics, yoga with step aerobics and control groups were 71.13, 72.73 and 64.70 respectively. The obtained F-ratio for the post-test was 89.04 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant.

The adjusted post-test means of the yoga with floor aerobics, yoga with step aerobics and control groups were 71.14, 72.74 and 64.71 respectively. The obtained F-ratio for the adjusted post-test means was 85.46 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on high density lipoprotein. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table 3.

Table 3: The Scheffe's Test for the Differences between the Adjusted Post Test Paired Means on High Density Lipoprotein

Adjusted Post-test means			Mean Difference	Required CI
YWFAG	YWSAG	Control Group		
71.14	72.74	---	1.60	1.62
71.14	---	64.71	6.43*	
---	72.74	64.71	8.03*	

** Significant at 0.05 level of confidence*

The multiple comparisons showed in table proved that there existed significant differences between the adjusted means of yoga with floor aerobics and control group (6.43), yoga with step aerobics and control group (8.03). There was no significant difference between yoga with floor aerobics and yoga with step aerobics (1.60) at 0.05 level of confidence with the confidence interval value of 1.62. The pre, post and adjusted means on high density lipoprotein were presented through bar diagram for better understanding of the results of this study in Figure 1.

Figure 1: Pre Post and Adjusted Post Test Differences of the, Yoga with Floor Aerobics, Yoga with Step Aerobics and Control Groups on High Density Lipoprotein

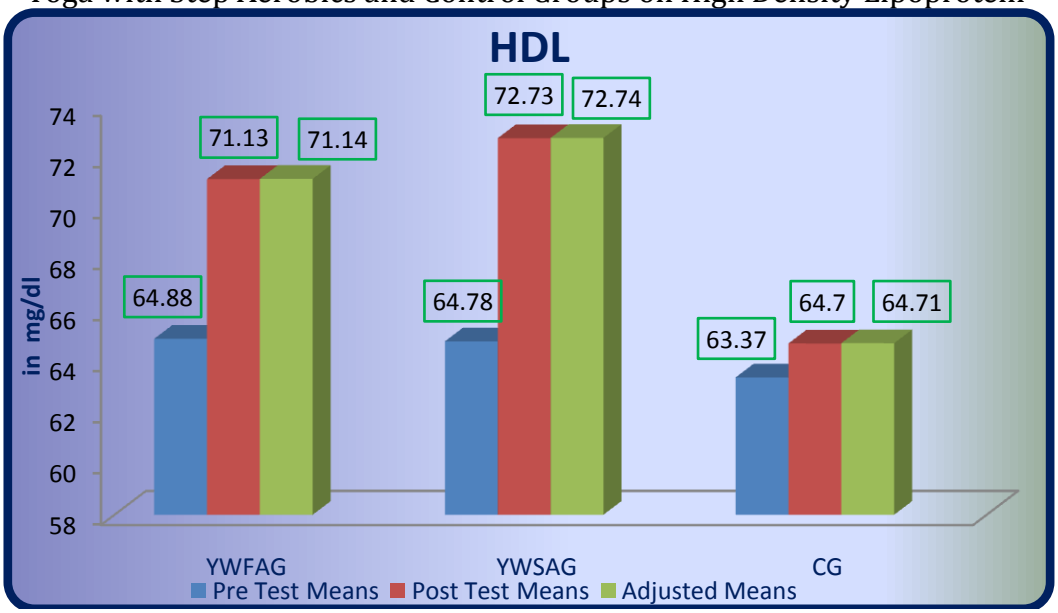


Table 4: Computation of Analysis of Covariance of Mean of Yoga with Floor Aerobics, Yoga with Step Aerobics and Control Groups on Low Density Lipoprotein

	YWFAG	YWSAG	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	115.62	115.77	115.91	**BG**	16.21	2	8.10	2.60
				WG	177.41	57	3.11	
Post-Test Means	109.40	108.41	115.78	**BG**	732.51	2	366.25	138.23*
				WG	151.02	57	2.64	
Adjusted Post-Test Means	109.42	108.43	115.75	**BG**	730.21	2	365.10	126.96*
				WG	161.03	56	2.87	

An examination of table 4 indicated that the pre test means of yoga with floor aerobics, yoga with step aerobics and control groups were 115.62, 115.77 and 115.91 respectively. The obtained F-ratio for the pre-test was 2.60 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups. The

post-test means of the yoga with floor aerobics, yoga with step aerobics and control groups were 109.40, 108.41 and 115.78 respectively. The obtained F-ratio for the post-test was 138.23 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant.

The adjusted post-test means of the yoga with floor aerobics, yoga with step aerobics and control groups were 109.42, 108.43 and 115.75 respectively. The obtained F-ratio for the adjusted post-test means was 126.96 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on low density lipoprotein. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table 5.

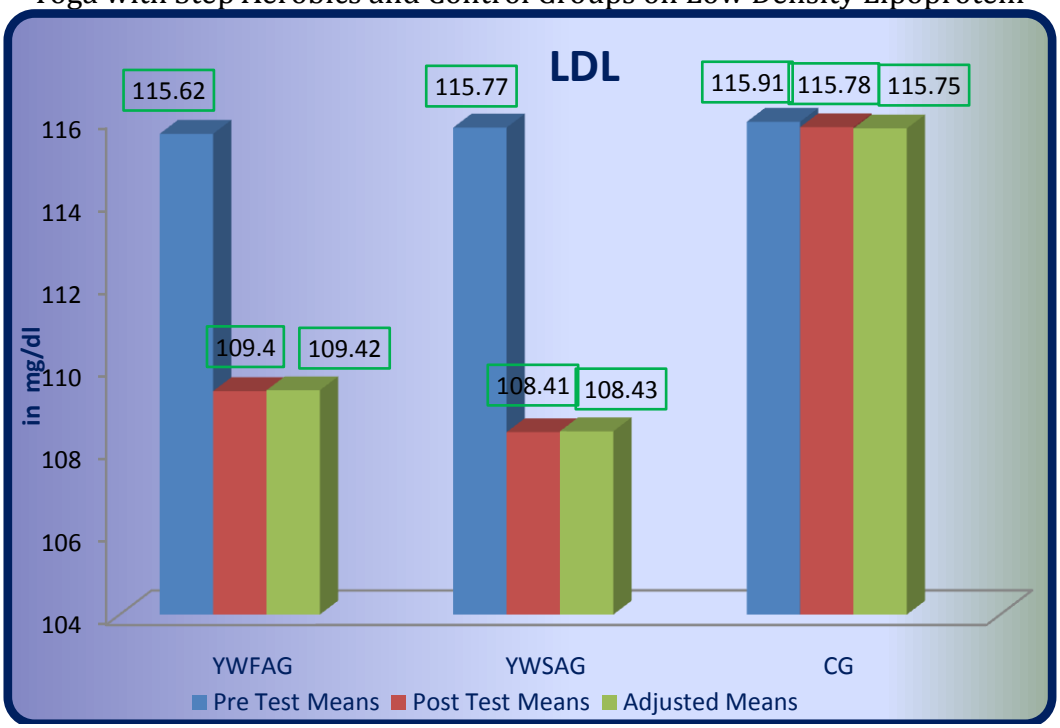
Table 5: The Scheffe's Test for the Differences between the Adjusted Post Test Paired Means on Low Density Lipoprotein

Adjusted Post-test means			Mean Difference	Required CI
YWFAG	YWSAG	Control Group		
109.42	108.43	---	0.99	1.38
109.42	---	115.75	6.33*	
---	108.43	115.75	7.32*	

** Significant at 0.05 level of confidence*

The multiple comparisons showed in table proved that there existed significant differences between the adjusted means of yoga with floor aerobics and control group (6.33), yoga with step aerobics and control group (7.32). There was no significant difference between yoga with floor aerobics and yoga with step aerobics (0.99) at 0.05 level of confidence with the confidence interval value of 1.38. The pre, post and adjusted means on low density lipoprotein were presented through bar diagram for better understanding of the results of this study in Figure 2.

Figure 2: Pre Post and Adjusted Post Test Differences of the, Yoga with Floor Aerobics, Yoga with Step Aerobics and Control Groups on Low Density Lipoprotein



Conclusions:

From the analysis of the data, the following conclusion was drawn:

- ✓ The yoga with floor exercises group had shown significant improvement in all the selected lipid profiles among overweight school boys.
- ✓ The yoga with step exercises group had shown significant improvement in all the selected lipid profiles among overweight school boys.

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