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Effect of Walking, Jogging and Running Exercises on Triglyceride in Middle Aged Men

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Abstract

The present study is aimed to achieve the effect of walking, jogging and running exercises on triglyceride in middle aged men in the age of 35 to 45 years. Forty men subjects of teaching and non-teaching staffs were assigned to four groups, Department of Physical Education and Sports Sciences, Annamalai University. Selected subjects were three experimental groups and one control with ten members in each group. They are Group I as control, Group II as walking; Group III as jogging and Group IV as running. The duration of experimental period is 3 months (3 days /week).Walking; jogging and running exercises were performed by the experimental groups whereas the control remain as normal with the sedentary life., The obtained data on triglyceride was analysed statistically by analysis of covariance (ANCOVA) and Scheffe's post-hoc test was used when the adjusted post test means were found to be significant. In all the cases, 0.05 level of confidence was fixed to test the significance. The resulting data revealed that 12 weeks of walking, jogging and running exercises were found to be benefitted in modifying the triglycerides levels among middle aged men compared to control. It is predominantly effective in walking group men than other exercise groups. Hence the study concluded that walking exercise prevails in retaining the normal healthy body.

Keywords: Walking, Jogging, Running, Training and Triglycerides.

Introduction

Triglyceride is another fat in the blood stream. High level of triglyceride is also linked to heart disease. Many people who have heart disease or diabetes have high triglyceride level (Gandapur et al., 2006). Exercise is very important for health and fitness. It has multiple beneficial effects on our body. Many previous studies have shown that regular exercise is beneficial and increase the HDL level and decreases total cholesterol and LDL levels (Durstin et al., 2001).

Triglycerides are the primary form of fat stored in the body. Body converts excess calories into triglycerides. Certain fats such as Tran's fats can also raise triglyceride levels. These triglycerides are stored within fat cells beneath the skin. They provide energy in between meals about 60 percent of the total needs while at rest and act as insulation and as a cushion for organs. Triglycerides circulating through the blood can be directly measured to gauge the risk of heart disease (Family Doctor Diabetes and Exercise 2010).

Our body's circulatory system transports molecules such as fats and carbohydrates to cells, where they are used for various tasks. Although the circulatory system is necessary for maintaining life, excess levels of molecules in the blood can cause serious health concerns. Thus the Regular physical activities such as walking, jogging and running can reduce high triglycerides.The study is aimed to achieve the effect of walking, jogging and running exercises on triglyceride in middle aged men.

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Methodology

The purpose of the study was to find out the effect of walking, jogging and runningexercisesprogramme on triglycerides among middle aged men.

Subjects

The subjects selected randomly from male staff members of Annamalai University. Their age ranged between 35 to 45. They were segregated into four groups, each group consisting of 10 subjects. They were named walking group, jogging group, running group and control group. The former three groups underwent their respective exercise training and the last group acted as control. Following the routine procedures of selection of subjects.

Variables

The walking, jogging and running exercise programme were selected as independent variables and one of the coronary heart disease risk factor triglycerides was selected as dependent variables for this study.

Training Programme

The exercise training programme for the experimental groups are given below:

- The walking group was started with 3200 meters brisk walking and ended with 4100 meters brisk walking. The 300 meters load was increased every two weeks for twelve weeks.
- The jogging group was started with 800 meters jogging with three repetitions and ended with 1300 meters jogging with three repetitions. Every two weeks 100 meters load was increased for twelve weeks and the recovery (relax) period was given as 400 meters relax walking between the repetition. The 100 meters load was increased every two weeks for twelve weeks.
- The running group was started with 700 meters running with three repetitions and ended with 1200 meters running with three repetition. Every two weeks 100 meters load was increased for twelve weeks and the recovery (relax) period was given as 400 meters relax walking between the repetition. The 100 meters load was increased every two weeks for twelve weeks.

The subjects of three experimental groups underwent their respective exerciseprogramme for twelve weeks. On every day of the training session the exerciseschedule done were approximately from thirty-five to fifty-five minutes, this included warming up and warming down. Group-IV was instructed not to participate in any strenuous physical exercises and requested to do regular work throughout of the study.The Pre-test and post-test data were collected two days before and after the exercise programme on Triglycerides by using Enzymatic Colorimetric Method.

Statistical Analysis

To nullify the variation in the pre-test means, analysis of covariance (ANCOVA) was applied and the adjusted post-test means were tested for significance. If the 'F' ratio was significant Scheffe's post-hoc test was applied to find out the significant differences if any, among the paired means. The level of significance was set at 0.05 level.

Results of the Study

Triglycerides

The data collected during pre and post-tests among walking, jogging, running groups and control group on triglycerides have been analysed statistically and the results are shown in table-1.

Table I. Analysis of covariance for pre- and post-test data on triglycerides among walking, jogging, running groups and control group

	Walking group	**Jogging group**	**Running group**	**Control group**	SOV	**Sum of squares**	**df**	**Mean square**	*'F' ratio*
Pre-Test									0.021
Mean	146.20	145.50	146.60	147.10	B:	13.70	3	4.57	
SD	2.70	12.77	14.82	21.74	W:	7765.40	36	215.71	
Post-Test									0.40
Mean	140.40	142.30	144.50	146.90	B:	236.10	3	78.69	
SD	3.27	12.28	14.00	22.11	W:	7595.90	36	211.00	
Adjusted Post-Test Mean	140.55	143.14	144.25	146.20	B:	165.00	3	54.96	26.10*
					W:	73.76	35	2.11	

** Significant at 0.05 level of confidence.*

df-degrees of freedom; SD-Standard Deviation; S.O.V.-Source of Variance.

B-Between; W-Within

The table value required for significance at 0.05 level with df 3 & 56, and 3 & 55 are 2.87 and 2.87 respectively.

It is clear from table-I that the pre-test mean values of the triglycerides for walking group is 146.20, jogging group is 145.50, running group is 146.60 and control group is 147.10. The obtained 'F' ratio 0.021 is less than the table value of 2.87 required for df 3 and 36 at 0.05 level of significance. It is inferred that there is statistically no significant variation among experimental groups and control group before the commencement of training programme.

Table-I further shows that the adjusted post-test mean values for walking group is 140.55, jogging group is 143.14, running group is 144.25 and control group is 146.20, which have an 'F' ratio of 26.10 and it is higher than the table value of 2.87 required for df 3 and 35 at 0.05 level of significance. It is found that significant differences exist among the four groups on triglycerides after adjusting the initial mean differences on the post-test means.In order to determine which of the paired means have significant differences, Scheffe's test was computed and it is presented in table-II.

Table II. Scheffe's test for the differences between the adjusted post-test paired means of triglycerides

Adjusted Post-Test Means				Means Differences
Walking group	Jogging group	Running group	Control group	
140.55			146.20	5.65*
	143.14		146.20	3.06*
		144.25	146.20	1.95*
140.55	143.14			2.59*
140.55		144.25		3.70*
	143.14	144.25		1.11

**Significant at 0.05 level.*
The confidence interval required for significance at 0.05 level is 1.94.

An examination of the table-II indicates that the adjusted post-test mean difference of triglycerides between control group and walking group, control group and jogging group and between control group and running group are 5.65, 306and 1.95, respectively which are higher than the confidence interval value of 1.90 at 0.05 level of significance.

It is inferred that the twelve weeks of walking, jogging and running exercise programme have significantly decreased the triglycerides in three experimental groups as compared to the control group.

Table-2 also shows the mean difference between walking group and jogging group is 2.59, walking group and running group is 3.70 which are higher than the confidence interval value 1.90 at 0.05 level of significance. The result may be concluded that significant decrease exists in triglycerides for walking group compared to jogging and running groups.

The mean difference between jogging group and running groups is 1.11 and it is lower than confidence interval value of 1.90 at 0.05 level of significance. The result shows that no significant difference exists in triglycerides among these two groups.

Findings

The 12 weeks of walking, jogging and running exercise programme have significantly decreased the triglycerides in three experimental groups as compared to the control group.The result may be concluded that significant decrease exists in triglycerides for walking group compared to jogging and running groups.The jogging group showed insignificant reduction in triglycerides compared to running group after the exercise programme.

Brisk walking jogging or running exercise programme decrease triglycerides of 0.1–0.2 mmol per liter. (Durstine et al., 2001) and the following literatures have shown that the systematic walking, jogging and running exercise programmes produced significant decrease in triglyceridesas compared to control group among middle aged men.(Gandapur, 2006), (Batty and Lee, 2004), (Gill et al., 2003), (Jafari et al., 2003), (Garvey, 2003), (Durstine et al., 2001), (Dengel et al., 1998), (Hardman and Hudson, 1994).

Conclusions

The following conclusions were drawn from the results of the study:

- Walking, jogging and running exercise programme groups showed significant reduction in triglycerides as compared to control group.
- Walking group showed significant reduction in as compared to jogging and running groups.
- The jogging group showed insignificant increase intriglycerides compared to running group.

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