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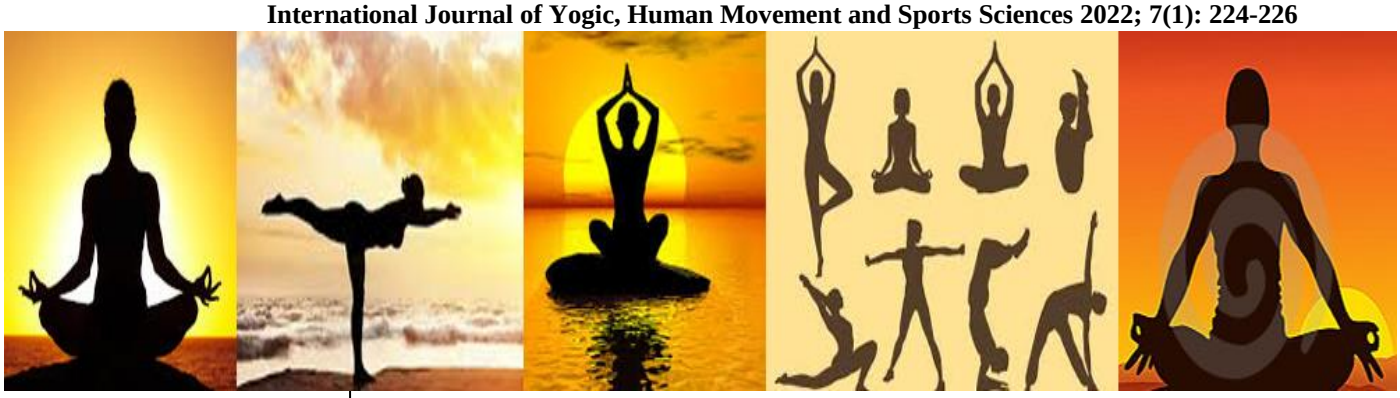

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Resistance training as means for controlling the LDL cholesterol among middle aged over weight men

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Abstract
This study aimed to find out the effect of resistance training on the LDL cholesterol level of over weight middle aged men. For conducting the study, 24 over weight men were selected. They were divided into experimental and control groups of 12 each. The experimental group under went training programme in resistance training and the control group did not involve in any training session. A pre test was administered for both groups by measuring their LDL cholesterol level. After 24 weeks of weight training for the experimental group, a post test was conducted for both the groups. The data were analysed using Anacova. The results of the study reveals that the experimental group showed significantly lower LDL cholesterol level.

Keywords: Resistance training, LDL cholesterol

Introduction
Everybody desires a long and healthy life and exercise has a great part to play in this. In one aspect the body can be said to commence ageing from the moment it is born, although it is usual to say it really begins in about the mid-thirties. However different systems of the body age at different rates, no doubt depending upon how they are used or not used. Many people continue a very active life, both physically and mentally, well in to their old age. The barrier of these activities often seems to be physiological rather than physical, and when a person thinks he is too old to do something physically he may well be completely wrong, although too much of exercise could do harm. The only way to find out if one can do something is to try (Hoac, 1986) [4].

A low body fat percentage is major aim for weight trainers, body builders and for the most competitive sports people (Ban, 1997) [1]. The people taking resistance training have a good posture, increased efficiency of heart and lungs, reduced cholesterol levels, increased muscle strength, reduced blood pressure and reduced risk of major illness such as diabetics, and heart diseases. The most efficient way to reduce body fat by means of exercise is to employ the longer duration endurance activities at a well-designed and consistently performed resistance training program can produce all these benefits (Clarke., 1975) [3].

The relationship between lipid levels and CHD has been studied at length and has contributed enormously to the literature. Current thinking is that total cholesterol (TC), Low Density Lipoprotein Cholesterol (LDL C), High Density Lipoprotein Cholesterol (HDLC), are relevant and Triglycerides (TG) are gaining importance as contributory factors. More active people develop less CHD than their inactive counterparts, and when they develop CHD, it occurs at a later age and tends to be less severe (Berlin,. And Colditz, 1990; Powell, *et al*., 1987) [2, 7]. The results of the numerous reports are quite variable, with some studies demonstrating a highly significant beneficial effect of exercise (Lakka, *et al*., 1994; Morris, *et al*., 1953) [5, 6]. This study will help you to get a clear picture of resistance training on making changes in the LDL cholesterol level.

Objective of the Study
The objective of this study is to find out the effect of resistance training on LDL cholesterol level of middle aged men.

Delimitations

The study was delimited in terms of sample and contents as follows

1. The study is restricted to 24 middle aged overweight men holding different administrative office at Pala Town of Kotayam District in Kerala.
2. The age of the subjects range between 32 and 49. All of them were healthy and normal. Pulse rate of over weight men.

Limitations

1. The hereditary and environmental factors of the subjects were recognized as limitation.
2. The difference prevailing in the internal and external factors which could have discouraged or motivated the subjects during training as well as testing periods could not be controlled.

Hypothesis

It is hypothesized that the LDL cholesterol level of experimental group will be significantly reduced due to resistance training.

Methodology

Selection of Subjects

This study is conducted by selecting, 24 middle aged overweight men from Pala town of Kottayam district in Kerala.

Design of the Study

Selected 24 over weight men were divided into experimental and control groups. After taking the pre test, the experimental group underwent a training programme of resistance training for a period of 24 weeks and the control group did not involve in any type of training. Post test was conducted for the selected variable after 24 weeks of training.

Results and Discussion

The data collected prior to and after the experimentation period on resting pulse rate among experimental and control groups were statistically analyzed and presented in table.

Table 1: Analysis of Covariance for LDL Cholesterol among Experimental & Control Groups

		Control Group	Exp. Group	sov	Sum of Squares	df	M.S	F-Ratio
Pre test	Mean	162.08	163.83	B	18.37	1	18.37	0.022
	SD	29.52	27.69	W	18024.58	22	819.29	
Post test	Mean	165.00	152.91	B	876.04	1	876.04	1.33
	SD	29.51	21.09	W	14472.92	22	657.86	
Adjusted post test mean		170.44	155.48	B W	1266.09 728.11	1 21	1266.09 34.67	36.52*

The Table value for 0.05 level of confidence with degree of freedom for 1&22 and 1&21 are 4.30 and 4.32 respectively

Table shows that the Pre Test means of LDL Cholesterol among Experimental group (163.83 ±27.69) and Control group (162.08 ± 29.52) resulted in F - ratio of 0.022 which indicates no significant difference between Pre Test means at .05 level of confidence. The Post Test means of HDL Cholesterol among Experimental group (152.91 ± 21.09) and Control group (165.00 ± 29.51) resulted in a F - ratio of 1.33 which is not significant at .05 level of confidence, whereas the adjusted post is means of Experimental (155.48) and Control groups (170.44) resulted in a F - ratio of 36.52 which was significant at .05 level of confidence (Fig 7).This indicates that there is a significant change in LDL Cholesterol among experimental group when compared with the control group. After going through the results, it was concluded that Resistance Training Program has significantly reduced LDL Cholesterol among over weight middle aged men.

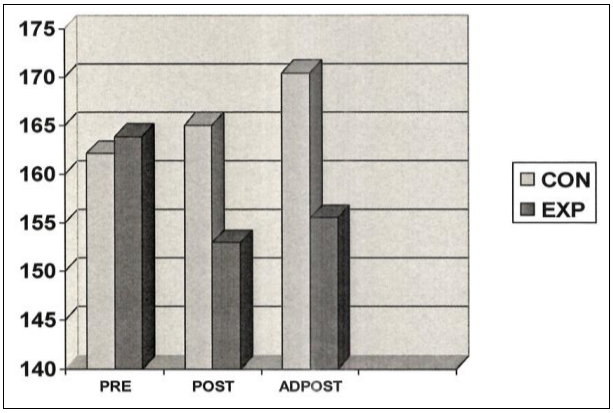

Fig 1: Bar Diagram Showing the Pre test, Post test and Adjusted Post Test Means of LDL Cholesterol Among Experimental and Control Groups

Conclusion

On the basis of the results obtained it was concluded that Resistance Training Program resulted in a significant decrease in LDL Cholesterol among Overweight middle aged men. The exact process by which exercise affects cholesterol levels has not yet been fully understood. However factors resulting from exercise training namely body weight loss, and changes in body composition, plasma volume and hormone and enzyme activity alter rate of synthesis transport and clearance of Lipids and Lipoproteins from the blood. The obtained results were in conformation with the findings of Goldberg L. *et al*. (1984) [9], Fripp RR, and Hodson JL, (1987) [8], Shaw BS, and Shaw 1. (2005) [10].

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