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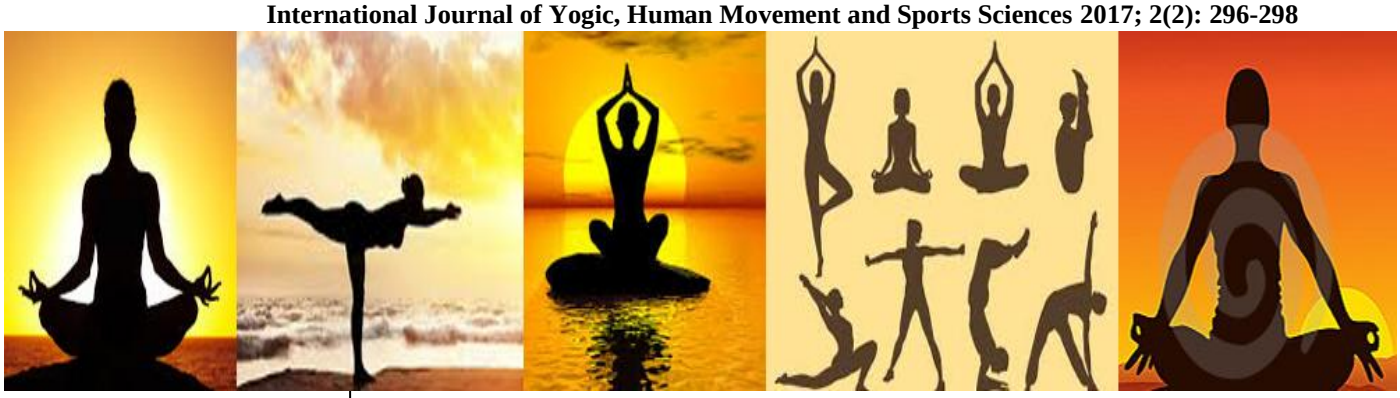

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Effect of yoga and naturotherapy on lipid profile of middle aged people

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Abstract
The purpose of the study was to determine the effect of eight weeks of yoga and naturotherapy programme on lipid profiles among the middle aged people. The subjects for the study were thirty middle aged people, fifteen were categorized into experimental group and other fifteen were categorized as control group. The following variables selected for the study: Total Cholesterol, High Density Lipoprotein Cholesterol, Low Density Lipoprotein Cholesterol, Very Low Density Lipoprotein Cholesterol and Triglycerides. The variables were statically examined for significant difference, if any, by applying the analysis of covariance (ANCOVA) with the help of SPSS package. The study indicated significant changes in total cholesterol and low density lipoprotein cholesterol level in the case of middle aged experimental group.

Keywords: Effect of yoga, naturotherapy, middle aged people

Introduction
The sedentary way of life had negative effect on human body and has been associated with many serious health problems. A harmoniously developed well-coordinated body is an asset to the individual and to the nation. A fit nation is an asset and weak nation is a liability. Every nation tries to forge ahead following its sacred culture and tradition. Appliances like television computer and the like have ensured that we do not have to leave our sofa to seek entertainment. People have become lazy and with the advent of modern home appliances there is no need for hard or even moderate physical work. This is a serious threat to the normal function of our body and is the cause of modern day illness like heart attack, obesity, and diabetics. Formerly these diseases that were found only among elderly are now common in the young and middle aged people. The people of these ages are striving hard to make their life easier. There is an increase in the mental stress and strain as never before. People are mentally unhealthy and are unequipped to cope with present day problem.

Yoga is the joining of individual soul to the universal soul, the union of the personal spirit to God. Yoga is a system of spiritual and physical culture practiced from ancient times in India. Yoga has been applied not only to the central aim of attaining heightened consciousness but also to the development of every human facility-physical, emotional and ethical which may conduce to the end.

Naturotherapy incorporates a variety of natural approaches (actively through diet/ nutrition and exercise and passively through rest and relaxation) to promote health and well being on all levels: body, mind and spirit. Naturotherapy is complimentary and can be utilized on its own or together with conventional medicine to support health and healing. The mind and the body are one, work together as whole as a whole and constantly interact with and influence each other. Naturotherapy always aims to remove the causes of the disease, at the same time restoring normal body activity.

Lipid profile is the pattern of lipids in the blood. A lipid profile usually includes the total cholesterol, high density lipoprotein (HDL) cholesterol, triglycerides, and the calculated low density lipoprotein (LDL) cholesterol. Lipid is a medical term used to describe fats in the blood stream.

The purpose of the study was to determine the effect of eight weeks of yoga and naturotherapy programme on lipid profiles among the middle aged people.

Methodology

The subjects for the study were thirty middle aged people, fifteen were categorized into experimental group and other fifteen were categorized as control group. Having gone through both critical and allied literature related to this study the following variables selected for the study; Total Cholesterol, High Density Lipoprotein Cholesterol, Low Density Lipoprotein Cholesterol, Very Low Density Lipoprotein Cholesterol and Triglycerides. The experimental group underwent eight weeks training programme with the training schedule prepared by the investigator.

Table 1: Schedule of Yoga Programme.

Yogasana	Duration	Repetition
Sukasana	1 to 3 minutes	
Vajrasana	1 to 3 minutes	
Sidhasana	10 Seconds	4 to 6 times
Sarvangasana	30 to 60 Seconds	3 to 4 times
Bhujangasana	10 to 30 Seconds	4 to 6 times
Matsyasana	10 to 30 Seconds	5 to 7 times
Ardha Matsyendrasana	2 to 10 Seconds	4 to 5 times
Trikonasana	2 to 3 Seconds	4 to 5 times
Vakrasana	30 Seconds	4 to 6 times
Makarasana	3 to 5 minutes	
Pranayama	1 to 3 minutes	Various Techniques
Shavasana	5 to 10 minutes	

Table 2: Illustration of Naturotherapy Programme

Food	Cooked foods, unpolished cooked rice, bread made of whole wheat, steamed, boiled, and baked form of food. Uncooked foods like vegetable salads, various fresh juice and fruits. Instructed to avoid fried food and non-vegetarian items like meat, egg, milk products etc. Healthy food should be taken regularly twice a day only
Sleep	Advised to avoid daytime sleep and only 6 to 8 hours sleep a day
Fasting	Recommended a diluted fruit juice fasting once in a week for a full day

Statistical Technique

The selected variables for which data were collected from two groups prior to and after experimentation are Total Cholesterol, High Density Lipoprotein Cholesterol, Low Density Lipoprotein Cholesterol, Very Low Density Lipoprotein Cholesterol and Triglycerides. These variables were statically examined for significant difference, if any, by applying the analysis of covariance (ANCOVA) with the help of SPSS package.

Results and Findings

The data pertaining to the analysis of lipid profile variables of Total Cholesterol, High Density Lipoprotein Cholesterol, Low Density Lipoprotein Cholesterol, Very Low Density Lipoprotein Cholesterol and Triglycerides among middle aged men have been presented in the Table 3-7.

Table 3: Analysis of Covariance on Total Cholesterol of the experimental group and control group.

	Expt. Group	Control Group	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F Ratio
Pre test Mean	212.467	208.733	Between	104.533	1	104.533	0.180
SD	24.468	23.738	Within	16270.667	28	581.095	
Post test Mean	208.133	211.933	Between	108.300	1	108.300	0.273
SD	20.050	19.794	Within	11112.667	28	396.881	
Adjusted Post test Mean	206.677	213.389	Between	335.695	1	335.695	7.456
			Within	1215.652	27	45.024	

The required table value for significance at 0.05 level of confidence with degree of freedom 1and 27 is 4.21 and degree of freedom 1and 28 is 4.20

The result of the study showed that there is significant difference among adjusted post test means of Total Cholesterol of experimental group and control group.

Table 4: Analysis of Covariance on High Density Lipoprotein Cholesterol of the experimental group and control group.

	Expt. Group	Control Group	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F Ratio
Pre test Mean	43.467	42.800	Between	3.333	1	3.333	0.040
SD	9.319	8.930	Within	2332.133	28	83.290	
Post test Mean	44.267	41.400	Between	61.633	1	61.633	0.964
SD	8.988	6.864	Within	1790.533	28	63.948	
Adjusted Post test Mean	44.175	41.492	Between	53.891	1	53.891	7.902
			Within	1612.514	27	59.723	

The required table value for significance at 0.05 level of confidence with degree of freedom 1and 27 is 4.21 and degree of freedom 1and 28 is 4.20

The result of the study showed that there is no significant difference among adjusted post test means of High Density Lipoprotein Cholesterol of experimental group and control group.

Table 5: Analysis of Covariance on Low Density Lipoprotein Cholesterol of the experimental group and control group.

	Expt. Group	Control Group	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F Ratio
Pre test Mean	139.933	137.400	Between	48.133	1	48.133	0.121
SD	18.184	21.533	Within	11120.533	28	397.162	
Post test Mean	135.200	142.133	Between	360.533	1	360.533	0.887
SD	22.412	17.618	Within	11378.133	28	406.362	
Adjusted Post test Mean	134.124	143.209	Between	616.431	1	616.431	4.965
			Within	3352.136	27	124.153	

The required table value for significance at 0.05 level of confidence with degree of freedom 1and 27 is 4.21 and degree of freedom 1and 28 is 4.20.

The result shows that there is significant difference among adjusted post test means of low Density Lipoprotein Cholesterol of experimental group and control group.

Table 6: Analysis of Covariance on Very Low Density Lipoprotein Cholesterol of the experimental group and control group.

	Expt. Group	Control Group	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F Ratio
Pre test Mean	29.067	28.533	Between	2.133	1	2.133	0.034
SD	9.075	6.675	Within	1776.667	28	63.452	
Post test Mean	28.667	28.400	Between	0.533	1	0.533	0.020
SD	5.327	4.954	Within	740.933	28	26.462	
Adjusted Post test Mean	28.601	28.466	Between	0.137	1	0.137	0.006
			Within	633.380	27	23.459	

The required table value for significance at 0.05 level of confidence with degree of freedom 1and 27 is 4.21 and degree of freedom 1and 28 is 4.20.

The result showed that there is no significant difference among adjusted post test means of Very Low Density Lipoprotein Cholesterol of experimental group and control group.

Table 7: Analysis of Covariance on Triglycerides of the experimental group and control group.

	Expt. Group	Control Group	Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	Obtained F Ratio
Pre test Mean	146.200	142.600	Between	97.200	1	97.200	0.059
SD	46.166	33.829	Within	45860.000	28	1637.86	
Post test Mean	143.800	142.267	Between	17.633	1	17.633	0.027
SD	26.820	24.403	Within	18407.333	28	657.405	
Adjusted Post test Mean	143.373	142.693	Between	3.461	1	3.461	0.006
			Within	15830.769	27	586.325	

The required table value for significance at 0.05 level of confidence with degree of freedom 1and 27 is 4.21 and degree of freedom 1and 28 is 4.20.

The result of the study showed that there is no significant difference among adjusted post test means of Triglycerides of experimental group and control group.

Conclusion

The yoga and naturotherapy programme conducted for a period of eight weeks in the study indicated a positive change in total cholesterol and low density lipoprotein cholesterol level in the case of middle aged experimental group. The training programme has shown positive but insignificant changes in High Density Lipoprotein Cholesterol, Very Low Density Lipoprotein Cholesterol and Triglycerides.

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