Research Paper Physical Education

Changes in Cardiovascular Risk Factors of Professional College Studentsafter Twelve weeks of Isolated and Combined Brisk walking and Yogic Practices

K. Senthilnaathan Ph.D Part time Research Scholar, Department of Physical Education, Ganesar College of Arts & Science, Melaisivapuri, Pudukkottai, Tamilnadu.

Dr. N. Vijayaregunathan Director of Physical Education, Ganesar College of Arts & Science, Melaisivapuri, Pudukkottai, Tamilnadu.

ABSTRACT

Aim of the study was to find out the effects of isolated and combined brisk walking and yoga practices on selected cardio vascular Risk factors of professional college men students. The study was conducted on forty five (N=45) men players studying Karaikdudi Institute of Engineering Technology, Karaikudi Tamilnadu, India were selected as subjects. The selected players were assigned in to three groups of fifteen each(n=15), Group I underwent Brisk walking, Group II underwent Yogic practices, and Group III underwent Combined brisk walking and yogic practices. Total Cholesterol (TC) and Triglycerides (TGL) were selected as dependent Cardiovascular Risk Factors. The data on Total Cholesterol (TC) and Triglycerides were assessed by Blood Sample Tests. The training period was limited to 8 weeks duration. All the subjects were tested on selected dependent variables prior to and immediately after the training periods. The data collected data from the three groups prior to and immediately after the training programme on the selected criterion variables were statistically analyzed with Analysis of Covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, Scheffe's post hoc test was followed to determine which of the paired mean differences was significant. In all the cases 0.05 level of confidence was fixed to test the hypotheses. Total Cholesterol (TC) and Triglycerides showed significant difference among the groups. Combined brisk walking and yogic practices group showed better performance than Brisk walking group and yogic practice group.

Key words: Brisk walking, Yogic practice, Total Cholesterol (TC) and Triglycerides (TGL)

KEYWORDS Brisk walking, Yogic practice, Total Cholesterol (TC) and Triglycerides (TGL)

INTRODUCTION

Healthy living and physical fitness are closely connected. Being physically fit not only helps people live healthy lives; it also helps people live longer. People who make physical activity and exercise a part of their daily lives when they are young are more likely to keep it in their lives as they grow older and benefit from it throughout their life spans. Physical activity is defined as any movement that spends energy. Exercise is a subset of physical activity, but it is an activity that is structured and planned (Coakley, 1986).

One of the most important benefits of physical activity is that it actually lessens a person's risk of developing or dying from many of the most common serious illnesses. The risk of developing colon cancer, heart disease, high blood pressure, or diabetes is reduced through regular physical activity. Fitness has also been proven to help build healthy bones, joints, and muscles. Furthermore, regular physical activity reduces the overall risk of dying prematurely from any cause.

Regular activity and exercise make for a healthier heart. A healthy heart is a strong heart that works efficiently. The heart pumps blood, which carries oxygen to muscles and carries away waste. How well the heart performs is a good indication of how healthy a person's cardiovascular system is.

Regular exercise is a critical part of staying healthy. People who are active live longer and feel better. Exercise can help you maintain a healthy weight. It can delay or prevent diabetes, some cancers and heart problems.

Walking may be an appropriate activity for home-based programs because it has resulted in greater improvements in pain and greater participation rates than other forms of aerobic exercise, such as running or cycling (Westby, 2001).

The word 'Yoga' is derived from the Sanskrit root 'Yuj' (to Join, to use, to concentrate one's attention on) also means to bind, join, attach and yoke to direct and concentrate one's attention on to strengthen, to use and apply. Yoga is one of the six orthodox systems of Indian Philosophy. It was collated, co-ordinated and systematized by Patanjali (The pro-pounder of Yoga Philosophy) in his classical work, 'The Yoga Sutras', which consists of 185 terse aphorisms. The System of Yoga is called so because it teaches the means by which the individual soul can be united to or be in communion with the God, and so secures liberation/salvation. One who follows the path of Yoga is a Yogi.

Changes in cardiac structure and physiology result in alterations in cardiac function. Those commonly observed include an increased refractory period, lengthened contraction time, increased time to reach peak force, and incomplete relaxation during early diastolic filling. This last change inhibits the passive filling of the ventricle, causing the atria to make a greater contribution to the filling stage of the cardiac cycle. The magnitude of this change may be quite substantial, as in older adults (>65 years) the late diastolic filling phase may account for 37% of total filling, as compared with only 19% for adults in their third decade. Another factor stated to contribute to an age related decline in cardiac function is an increased left ventricular regional diastolic asynchrony (Woolf-May et al., 1997).

METHODOLOGY

The study was conducted on forty five (N=45) men players studying Karaikdudi Institute of Engineering Technology, Karaikudi Tamilnadu, India were selected as subjects. The selected players were assigned in to three groups of fifteen

each (n=15), Group I underwent Brisk walking, Group II underwent Yogic practices, and Group III underwent Combined brisk walking and yogic practices. Total Cholesterol (TC) and Triglycerides (TGL) were selected as dependent Cardiovascular Risk Factors. The data on Total Cholesterol (TC) and Triglycerides were assessed by Blood Sample Tests. The training period was limited to 8 weeks duration. All the subjects were tested on selected dependent variables prior to and immediately after the training periods.

RESULTS AND DISCUSSION

The data collected data from the three groups prior to and immediately after the training programme on the selected criterion variables were statistically analyzed with Analysis of Covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, Scheffe's post hoc test was followed to determine which of the paired mean differences was significant. In all the cases 0.05 level of confidence was fixed to test the hypotheses.

The Analysis of covariance (ANCOVA) on Total Cholesterol (TC) and Triglycerides (TGL) of Brisk walking, Yogic practices, and Combined brisk walking and yogic practices group have been analyzed and presented in Table -I.

Table – I

Analysis of Covariance between Brisk walking, Yogic practices, and Combined brisk walking and yogic practices group on Total Cholesterol (TC) and Triglycerides (TGL)

Certain Variables	Adjusted Post test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Brisk Walking Group-(I)	Yogic Practices Group-(I)	Combined Brisk walking and Yogic Practices Group (III)					
Total Cholesterol (TC)	174.71	180.42	160.14	Between	3261.86	2	1630.93	26.92*
				With in	2483.97	41	60.58	
Triglycerides (TGL)	119.18	132.99	115.49	Between	2549.75	2	1274.88	26.71*
				With in	1957.02	41	47.73	

***Significant at .05 level of confidence.**

(The table value required for significance at 0.05 level with df 2 and 41 is 3.23)

Table-I shows that the adjusted post test mean values of Total Cholesterol (TC) and Triglycerides (TGL) for Brisk walking, Yogic practices, and Combined brisk walking and yogic practices group are 174.71, 180.42, 160.14, 119.18, 132.99 and 115.49 respectively. The obtained F-ratios are 26.92 and 26.71 is more than the table value 3.23 for df 2 and 41 required for significance at 0.05 level of confidence.

The results of the study indicate that there is a significant difference exists among the adjusted post test means of experimental groups showing the decrease in Total Cholesterol (TC) and Triglycerides (TGL).

To determine which of the paired means had a significant differences, Scheffe's test was applied as Post hoc test and the results are presented in Table II.

Tabl5e - II

The Scheffe's test for the Differences between t5he Adjusted Post Tests Paired Means on Dependent Variables

Certain Variables	Adjusted Post test Means			Mean Difference	Confidence Interval
	Brisk Walking Group-(I)	Yogic Practices Group-(I)	Combined Brisk walking and Yogic Practices Group (III)		
Total Cholesterol (TC)	174.71	180.42		5.71	7.22
	174.71		160.14	14.30*	7.22
		180.42	160.14	20.28*	7.22
Triglycerides (TGL)	119.18	132.99		13.81*	6.41
	119.18		115.49	3.69	6.41
		132.99	115.49	17.50*	6.41

*** Significant at.05 level of confidence**

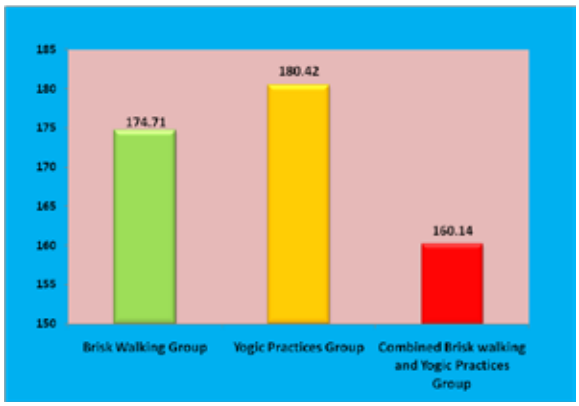
Table-II shows that the adjusted post test means for differences on Total Cholesterol (TC) between brisk walking group and combined brisk walking and yogic practices group and yogic practices group combined brisk walking and yogic practices group are 14.30, and 20.28. The values are greater than the confidence interval 7.22, which shows significant differences at 0.05 level of confidence. The values between brisk walking group and yogic practices group were 5.71, which is lesser than the confidence interval so it showed insignificant differences.

Table-II further shows that the adjusted post test means for differences on Triglycerides (TGL) between brisk walking group and yogic practices group, and yogic practices group and yogic practices group combined brisk walking and yogic practices group are 13.81 and 17.50. The values are greater than the confidence interval 6.41, which shows significant differences at 0.05 level of confidence. The values between brisk walking group and combined brisk walking were 3.69, which is lesser than the confidence interval so it showed insignificant differences.

The adjusted post test means values of Brisk walking, Yogic practices, and Combined brisk walking and yogic practices group on Total Cholesterol (TC) and Triglycerides (TGL) were graphically represented in the figure I and figure II respectively.

Total Cholesterol (TC) in mg/dl

Figure I: Adjusted Post Test Means Values of Brisk Walking, Yogic Practices, and Combined Brisk Walking and Yogic Practices Group on Total Cholesterol (TC)



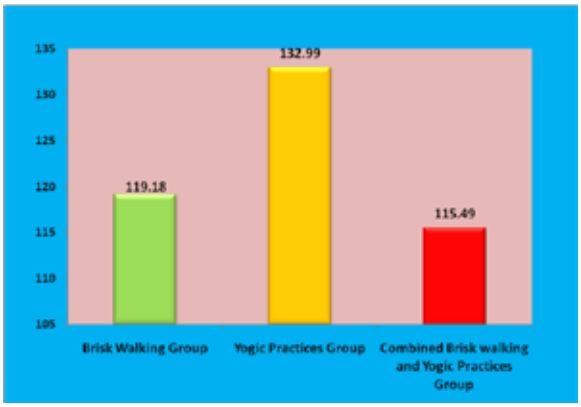


Figure II: Adjusted Post Test Means Values of Brisk Walking, Yogic Practices, and Combined Brisk Walking and Yogic Practices Group on Triglycerides (TGL)

CONCLUSION

From the analysis of the data, the following conclusions were drawn.

1. The Experimental groups had registered significant improvement on the selected criterion variables namely Total Cholesterol (TC) and Triglycerides (TGL).
2. It may be concluded that combined brisk walking and yogic practices group is better than brisk walking and yogic practices group in decreasing Total Cholesterol (TC) and Triglycerides (TGL).

REFERENCES

Coakley J. Jay (1986), Sport in Society: Issues and Controversies, Times Mirror/Mosby College Publishing, St. Louis. | Westby MD(2001), A health professional's guide to exercise prescription for people with arthritis: a review of aerobic fitness activities, Arthritis Rheum, 45:501-511. | Woolf-May K, Kearney EM, Jones DW, Davison RC, Coleman D, Bird SR(1998), "The effect of two different 18-week walking programmes on aerobic fitness, selected blood lipids and factor XIIa", Journal of Sports Sciences, Nov;16(8):701-10. |