



Effects of Varied Combinations of Core Circuit Training using Yogic Practices and Aerobic Dance on Agility and Strength of World Beaters Talent Test among Over Weight Girls

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Abstract

Although yoga may help manage conditions comorbid with overweight and obesity, such as low back pain, whether yoga helps with weight loss or maintenance beyond that which can be achieved with diet and exercise remains unclear. The purpose of the present study was to find out the "Effects of varied combinations of core circuit training using yogic practices and aerobic dance on agility and strength of world beaters talent test among over weight girls". To achieve the purpose as samples initially 175 girls studying in schools were selected as subjects and measured their weight and height. The age of the subjects ranged from 10 to 13 years. Using the collected data on body weight and height, Body Mass Index (BMI) was calculated. From the selected subjects (N=175), based on the BMI, to identify the overweight subjects for the study, the subjects who were above 29 were screened and identified as overweight. Thus 57 subjects were identified as over weight (BMI >29) and used as subjects for the further study. From them 45 subjects were randomly selected and segmented into three groups equally. Thus each group was consisting of 15 subjects. Among the three groups two experimental groups and one control group were formed. Experimental group -1 was named as Circuit Core Package Training with Yogic practices (CCPYPG) and Experimental group -2 was named as Circuit Core Package Training with Aerobic Dance (CCPADG). As variables, agility and strength were selected for this study. The selected subjects of experimental groups and control group were measured on agility and strength which was considered as pre-test score. After completion of pre-test measure on variables used in the study, subjects of both experimental group were underwent the respective training program five days a week for about 12 weeks. The subjects of control group practiced with their own traditional training program other than any specific training which underlies the training program used for this study. Following the treatment of Circuit Core Package Training with Yogic practices (CCPYPG) and Circuit Core Package Training with Aerobic Dance (CCPADG), the subjects of experimental and control groups were further tested on variables of agility and strength as such in the pre- test and the collected data were considered as post test score. The collected data on agility and strength before and after the training program were treated with Analysis of Covariance so as to study the comparative effects of Core circuit training when practiced with Yogic practices and when practiced with aerobic dance on components of world beaters talent tests. Results of analysis of covariance explained that significant mean difference was observed on agility and strength among the three groups. Further to test paired means to find out the source for such significant mean difference on agility and strength, results of post hoc test was favored to the subjects practiced core circuit training with aerobic dance compared to the other groups. From the results it was concluded that the physical exercises specifically to strengthen the core stability and selected yogic practices underlie the development of strength and agility related aspects might be the source for the dominance of core circuit training with yogic practices on agility and strength.

Keywords: Circuit Training, Core Training, Yoga, Agility, Strength, Anacova.

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Introduction

Yoga is one of the most popular types of complementary and alternative medicine (CAM) practiced in the United States and is used far more often than any other type of CAM for weight loss or maintenance. [Sharpe PA 2007] In 2007, 6% of adults reported practicing yoga, an increase of nearly 20% from

5 years earlier. [Barnes PM 2007] This rise in popularity might be expected given that more than 50 conditions are reported to benefit from regular practice. [McCall T 2012] Overweight or obese individuals are less likely to practice yoga than those who are normal-weight, [Bertisch SM 2008] yet 40% of yoga practitioners are overweight or obese. [Birdee GS 2008]

Although the practice of yoga may help overweight or obese individuals manage comorbid conditions, such as low back pain, [Sherman KJ2011, Tilbrook HE2011] whether it helps with weight loss or maintenance beyond that which can be achieved

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with a calorie-reduced diet and increased exercise remains unclear. The purpose of this review was to summarize the evidence on yoga's relation to weight loss and maintenance, paying particular attention to its impact on behavior, neuropsychology, metabolism, and inflammation. The review then provides the basis for recommendations on yoga practice in the management of weight loss and maintenance.

Core Training

The meaning of the term "core training" has changed over the last 10 years. Originally, "abs exercises" meant the facilitation of abdominal exercises, usually using army techniques such as sit-ups and crunches, where both were introduced in the late 1970s to schools and fitness centers. The 'core training' or 'core muscle training' refers to the exercises and nutrition programs specific for the development and maintenance of the abdominal and back muscles. Core training is defined as the complete set of processes that support core muscle development. In the 1970s and 1980s, this would also have involved techniques from yoga, Pilates and martial arts.

Methodology

Selection of Subjects

Forty five over weight school girls from suburban society schools, Coimbatore district Tamilnadu, were select

subjects at random. The age of the subjects ranged from 10 to 13 years.

Experimental Design

The selected subjects were divided into two experimental groups and a control group. Experimental group -1 was named as Circuit Core Package Training with Yogic practices (CCPTY), Experimental group -2 was named as Circuit Core Package Training with Aerobic Dance (CCPTA), and Group -3 served as control participants. The agility and strength was select as dependent variable. All the subjects of three groups were tested the selected dependent variable at prior and immediately after the program of twelve weeks. The data was collect for all the groups on agility was measured by using the shuttle run the score was recorded in seconds, strength was measured by shot put the score was recorded in meters. The data were collected from the three groups before and after the training program.

Training Programme

The control group was not exposing to any specific Training. However, they were participating in their regular activities. The experimental groups 1 and 2 were subjected to twelve week of circuit core package training with aerobic dance and circuit core package training with yogic practices respectively. Then training was given for five days per week. Every training session lasted for 40 minutes.

Results and Discussion

Table I. Analysis of covariance on agility of different groups (Scores in Seconds)

Test	Group 1	Group 2	Group 3	SV	SS	df	MS	‘F’ Ratio
Pre test								
Mean	23.39	23.19	23.38	Between	0.387	2	0.19	0.32
S.D.	0.78	0.81	0.71	Within	25.13	42	0.59	
Post test								
Mean	22.20	22.62	23.34	Between	10.09	2	5.04	7.60*
S.D.	0.85	0.85	0.72	Within	27.90	42	0.66	
Adjusted post test								
Mean	22.13	22.74	23.28	Between	9.97	2	4.98	30.74*
				Within	6.65	41	0.16	

* Significant at .05 level of confidence.

Results on Agility

Pre - Test: The AM \pm SD pre-test agility scores of G1, G2, and G3 were, 23.39 \pm 0.78, 23.19 \pm 0.81 and 23.38 \pm 0.71 respectively. The obtained pre-test F value of 0.32 was lesser than the required Table F value of 2.76. Hence the pre-test means value of circuit core package training with aerobic dance, circuit core package training with yogic practices and control group on agility

before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 2 and 42. Thus this analysis confirms that the random assignment of subjects into three groups were successful. Post - Test: The AM \pm SD post- test agility scores of G1, G2, G3 and are 22.20 \pm 0.85, 22.62 \pm 0.85, and 23.34 \pm 0.72 respectively. The obtained post-test F value of 7.60 was greater than the required Table F value

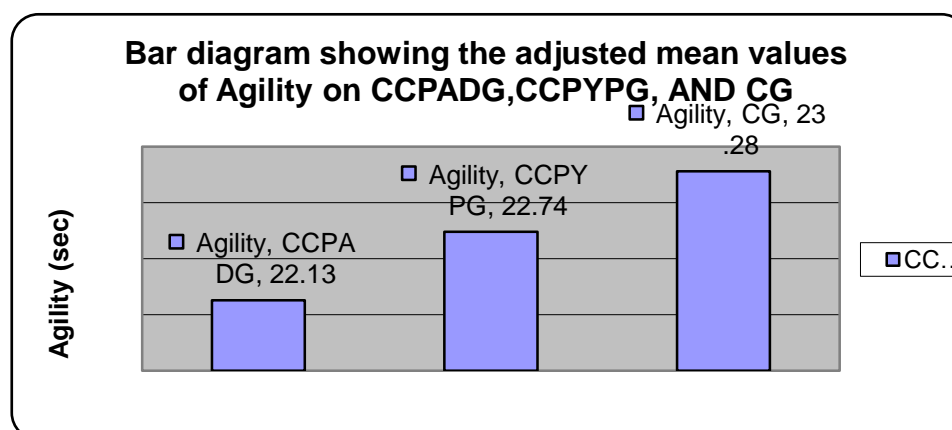
of 2.76. Hence the post- test means value of agility show significant at 0.05 level of confidence for the degrees of freedom 2 and 42. Thus the results obtained proved that the interventions namely circuit core package training with aerobic dance, circuit core package training with yoga on agility produced significantly different improvements among the three groups. Adjusted Post - Test: The AM \pm SD post-test agility scores of G1, G2, and G3 are 22.13, 22.74, and 23.28 respectively. The obtained adjusted post - test F value of 30.74 was greater than the required Table F value of 2.76. Hence the post -

test means value of agility show significant at 0.05 level of confidence for the degrees of freedom 2 and 41. Since the observed F value on adjusted post-test mean among the groups such as circuit core package training with aerobic dance, circuit core package training with yoga on agility produced significantly different improvements among the three groups. In order to find out which intervention programme used in the present study was the source for the significance of adjusted means was tested by Scheffe's post hoc test. The results of the same are presented in the table- I(a)

Table I (a). Scheffe's post hoc test mean differences on agility among three groups (Scores in Seconds)

Group I	Group II	Group III	Mean Differences	Confidence Interval Value
22.13	22.74	-	0.61*	0.43
22.13	-	23.28	1.15*	0.43
-	22.74	23.28	0.54*	0.43

* Significant at .05 level of confidence.



* Significant at .05 level of confidence.

Table I (a) shows the significant difference of paired adjusted post-test means of circuit core package training with aerobic dance, circuit core package training with yoga and Control group on agility. The obtained mean differences among circuit core package training

with aerobic dance, circuit core package training with yoga and control group, was similar than the mean differences because of the confidential values 0.28. All the remaining group comparisons was greater than the confidential interval value on agility.

Table II. Analysis of covariance on strength of different groups (Scores in Meters)

Test	Group 1	Group 2	Group 3	SV	SS	df	MS	‘F’ Ratio
Pre test								
Mean	3.52	3.43	3.53	Between	0.07	2	0.07	0.17
S.D.	0.46	0.43	0.46	Within	8.63	42	8.63	
Post test								
Mean	4.21	3.86	3.51	Between	3.64	2	1.82	7.82*
S.D.	0.52	0.46	0.46	Within	9.79	42	0.23	
Adjusted post test								
Mean	4.18	3.92	3.48	Between	3.80	2	1.88	82.25*
				Within	0.94	41	0.024	

* Significant at .05 level of confidence.

Results on Strength

Pre - Test: The AM \pm SD pretest strength scores of G1, G2, and G3 were, 3.52 ± 0.46 , 3.43 ± 0.43 and 3.53 ± 0.46 respectively. The obtained pre-test F value of 0.17 was lesser than the required Table F value of 2.76. Hence the pre-test means value of circuit core package training with aerobic dance, circuit core package training with yogic practices and control group on strength before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 2 and 42. Thus this analysis confirms that the random assignment of subjects into three groups were successful. Post - Test: The AM \pm SD post- test strength scores of G1, G2, G3 and are 4.21 ± 0.52 , 3.86 ± 0.46 , and 3.51 ± 0.46 respectively. The obtained post-test F value of 7.82 was greater than the required Table F value of 2.76. Hence the post- test means value of strength show significant at 0.05 level of confidence for the degrees of freedom 2 and 42. Thus the results obtained proved that the interventions namely circuit core package

training with aerobic dance, circuit core package training with yogic practices on strength produced significantly different improvements among the three groups. Adjusted Post - Test: The AM \pm SD post-test strength scores of G1, G2, and G3 are 4.18, 3.92 and 3.48 respectively. The obtained adjusted post - test F value of 82.25 was greater than the required Table F value of 2.76. Hence the post - test means value of strength show significant at 0.05 level of confidence for the degrees of freedom 2 and 41. Since the observed F value on adjusted post-test mean among the groups such as circuit core package training with aerobic dance, circuit core package training with yogic practices on strength produced significantly different improvements among the three groups. In order to find out, which intervention programme used in the present study was the source for the significance of adjusted means, Scheffe's post hoc test was used to find out mean differences on strength among three groups. The results of the same are presented in the table- II (a).

Table II (a). Scheffe's post hoc test mean differences on strength among three groups (Scores in Meters)

Group I	Group II	Group III	Mean Differences	Confidence Interval Value
4.18	3.92	-	0.26*	0.16
4.18	-	3.48	0.70*	0.16
-	3.92	3.48	0.44*	0.16

* Significant at .05 level of confidence.

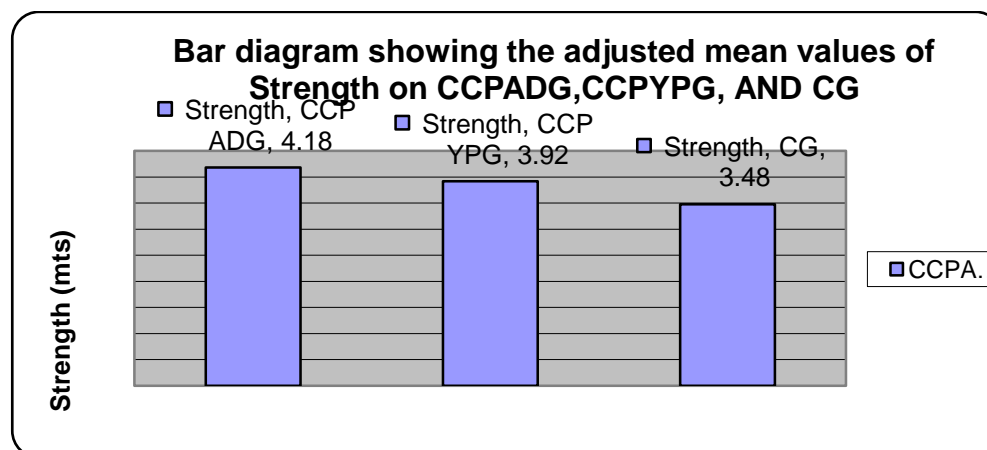


Table II (a) shows the significant difference of paired adjusted post-test means of circuit core package training with aerobic dance, circuit core package training with yogic practices and Control group on strength. The obtained mean differences between circuit core package training with aerobic dance, circuit core package training with yogic practices and control group, were similar than the mean differences because of the confidential values 0.16. All the remaining group comparisons were greater than the confidential interval value on strength.

Findings

There was a significant difference among the different circuit core training with aerobic dance and circuit core training with yogic practices and control Group on agility and strength. Significant improvement was noticed on agility and strength, due to three method of circuit core Training program among overweight school girls.

Conclusion

The two experimental training groups namely, circuit core package training with aerobic dance (CCPADG) and circuit core package training with yogic practices (CCPYPG) significantly improved the agility and strength of the overweight school girls. Circuit core package training with aerobic dance (CCPADG) has greater influence on agility and strength, on overweight school girls than the other groups. Circuit core package training with yogic practices (CCPYPG) has less influence. There was no development on agility and strength of control group.

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