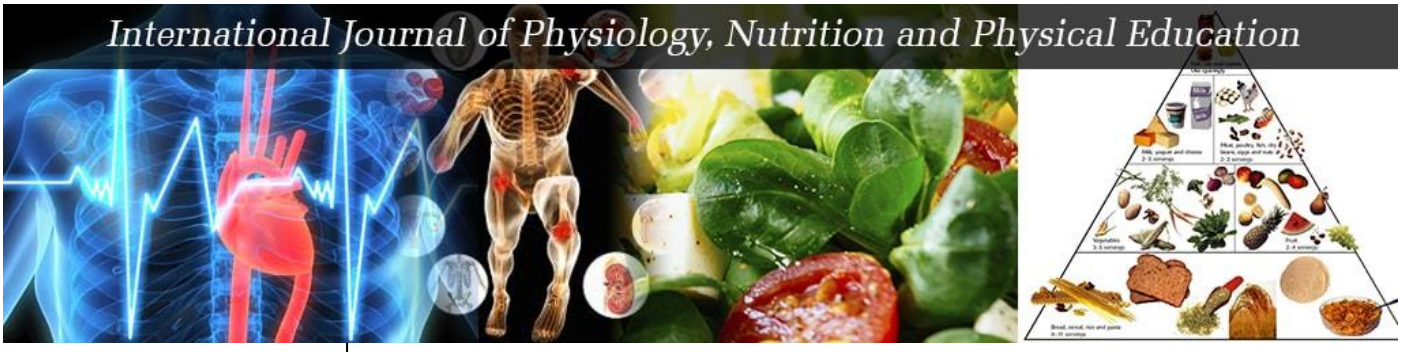

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Combined effects of core strength and SAQ training on selected physiological and body composition variables among male short distance runners

Vavileti. Balaji and Dr. Amirtham Sebastian

Abstract
Balaji. V (2018) conducted a study to find out the combined effects of core strength and SAQ training on selected physiological and body composition variables among male short distance runners. For this purpose 40 male subjects were selected from Ramakrishna Mission Vidyalaya High School, Coimbatore, and Tamilnadu. The selected subjects were divided in to 2 equal groups of 20 each. Group – 1 underwent combined core strength and SAQ training (n = 20). Group – 2 was control group (n = 20). The data was collected before and after 14 weeks of training program. The collected data was analysed by applying dependent 't' ratio. The level of significance was fixed at 0.05 level. The findings of the study strongly indicated that there was a significant difference between pre test and post test in combined core strength and SAQ training group on selected physiological (anaerobic capacity and breath holding time) and body composition (muscle mass percentage) variables. In control group there was no significant difference between pre test and post test on selected physiological and body composition variables.

Keywords: Combined core strength and SAQ training, physiological and body composition variables

Introduction

Core strength training: Creating an unstable environment in sports-specific training is highly important to properly develop the core strength of an athlete, but at the same time this philosophy continues to be neglected. Core training can be used to enhance the periodisation of training cycles and assist athletes over strength training plateaus. There is no doubt that training in an unstable environment has more sports-specificity than training stable environments. This helps athletes prepare to meet the demands that are often in the unique circumstances of their sport such as unpredictable situations or plays, interaction with teammates, counteraction to opponents, read and react situations, or body contact. Activities such as throwing a foot ball rely on the legs, torso, and upper body muscles all working together and contracting in the correct sequence. However, it is still common to see strength training programmes that attempt to develop the body with a highly segmented approach, by isolating specific muscle groups. This is even done with the body sitting stationary on a machine while moving one isolated body part through a controlled range of motion. This type of training has so little relation to sport that it can often leave a hard training athlete very ill prepared for his/her sport. Core training is a highly effective approach to improve performance, reduce the risk of injury, improve balance, and build a strong back and abdomen stabilise movement. (P. J. Sebastian, 2013) [1]

SAQ (speed, agility and quickness training): Speed, agility and quickness training became a very popular way to train athletes with continually increasing need to promote athletic ability; this type of training has proven to enhance the practical field abilities of particular in a wide variety of sports. It is practiced in addition to conventional resistance training in the gym and serve to assist in the transfer of gained in the gym to performance in the arena of play. Nearly every sport requires fast movement either the arms or legs and SAQ (speed agility and quickness) training can improve skill precisely in these areas. Hence all athletes can benefit when speed, agility and quickness training is integrated in to their training program (Beaudette & Brown, 2015).

Methodology

For this study 40 male short distance runners were randomly selected from Ramakrishna Mission Vidyalaya high school, Periyanaickenpalayam, Coimbatore, Tamilnadu. The selected subjects were divided in to 2 equal groups. One was combined core strength and SAQ training group and another one was control group. The following criterion variables were selected for the study such as physiological variables (anaerobic capacity and breath holding time) and body composition variable (muscle mass percentage). The training period was 14 weeks, one and half hour in evening session. For the pre and post-test randomized controlled group design was followed for this study. The data was analyzed by applying paired't' test. The level of significance was fixed at 0.05 level.

Table 1: Computation of 'T' ratio between pre and post test scores of experimental group and control group on anaerobic capacity

	Test	Mean	SD	DM	SD Mean Error	'T'
Experimental Group	Pre-Test	50.75	6.87	8.39	1.40	5.96
	Post-Test	59.14	5.36			
Control Group	Pre-Test	50.73	7.15	0.2	1.86	0.107
	Post-Test	50.93	3.21			

Level of significance 0.05, with df 19 table value is 2.09

Table 1 showing the pre test and post mean values of experimental group and control group. In pre test there was no significance difference between experimental group and control group in anaerobic capacity. In post test there was a significant difference between experimental group and control group in anaerobic capacity due to 14 weeks of combined core strength and SAQ training program.

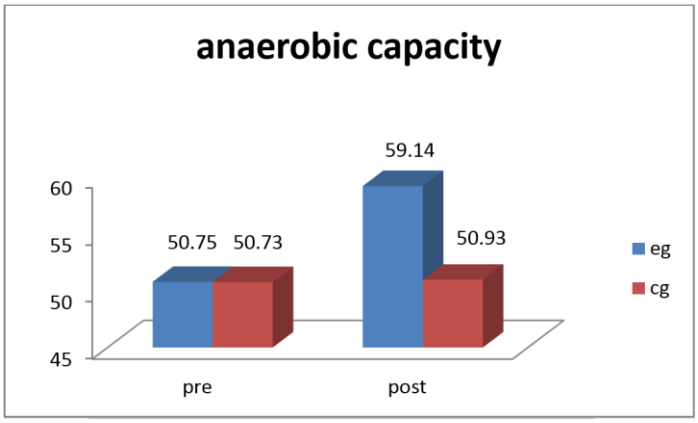

Fig 1: Bar diagram showing the mean values of experimental group and control on anaerobic capacity

Table 2: Computation of 'T' ratio between pre and post test scores of experimental group and control group on breath holding time

	Test	Mean	SD	DM	SD Mean Error	'T'
Experimental Group	Pre-Test	13.70	4.18	10.95	1.36	7.99
	Post-Test	24.65	5.91			
Control Group	Pre-Test	13.91	1.33	0.21	1.10	0.19
	Post-Test	13.70	4.18			

Level of significance 0.05, with df 19 table value is 2.09

Table 2 showing the pre test and post mean values of experimental group and control group. In pre test there was no significance difference between experimental group and control group in breath holding time. In post test there was a significant difference between experimental group and control group in breath holding time due to 14 weeks of combined core strength and SAQ training program.

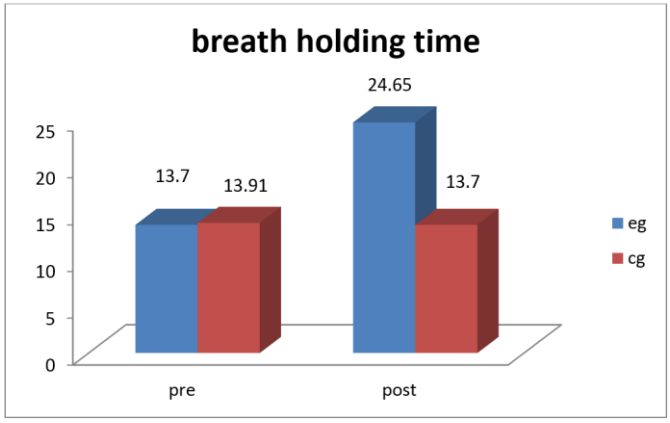

Fig 2: Bar diagram showing the mean values of experimental group and control on breath holding time

Table 3: Computation of 'T' ratio between pre and post test scores of experimental group and control group on muscle mass percentage

	Test	Mean	SD	DM	SD Mean Error	'T'
Experimental Group	Pre-Test	34.87	2.85	3.25	0.501	6.47
	Post-Test	38.12	2.31			
Control Group	Pre-Test	34.69	2.87	0.22	0.121	1.81
	Post-Test	34.91	2.82			

Level of significance 0.05, with df 19 table value is 2.09

Table 3 showing the pre test and post mean values of experimental group and control group. In pre test there was no significance difference between experimental group and control group in muscle mass percentage. In post test there was a significant difference between experimental group and control group in muscle mass percentage due to 14 weeks of combined core strength and SAQ training program.

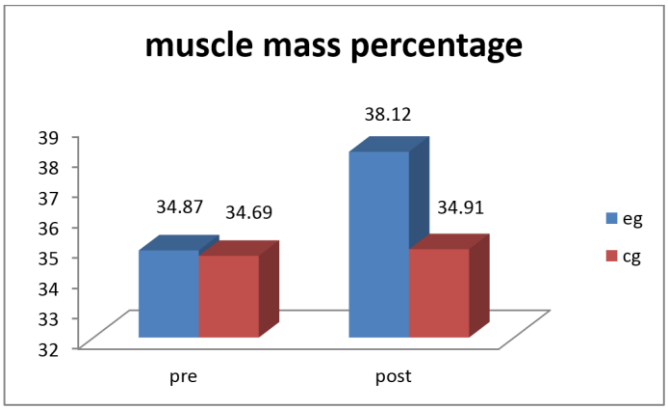

Fig 3: Bar diagram showing the mean values of experimental group and control on muscle mass percentage

Conclusion

The combined core strength and SAQ training group had shown significant improvement on selected physiological (anaerobic capacity and breath holding time) and body composition (muscle mass percentage) variables in post test when compared to pre test.

The control group had not shown any significant improvement on selected physiological (anaerobic capacity and breath holding time) and body composition (muscle mass percentage) variables in post test when compared to pre test.

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