

IMPACT OF TWELVE WEEKS OF CIRCUIT TRAINING ON BODY MASS INDEX AND PERCENTAGE OF BODY FAT OF PHYSICALLY ACTIVE YOUTHS

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Abstract:

The purpose of the study was to find out the twelve weeks of traditional circuit training on muscular endurance and cardio respiratory endurance of physically active youths. To achieve the purpose of the study, thirty (N=30) men students aged between 18 and 22 years studying S.N College chempazhanchy Trivandrum, Kerala were randomly selected as subjects. They were equally divided into two groups of fifteen subjects each. Group I (n=15) underwent circuit training for three session per week for twelve weeks. Group II (n=15) acted as control group however they underwent their regular physical education actives programmes. The data were collected prior and immediately after the training programme on body mass index (BMI) and percentage of body fat. The ANCOVA was used as statistical tool. The result of the study reveals that due to the impact of twelve weeks of circuit training on body mass index (BMI) and percentage of body fat of the physically active youths have significantly altered.

Keywords: Circuit training, Body Mass Index (BMI) & Percentage of Body Fat.

Introduction:

Circuit training has long been used into improve strength and fitness. It was first for analysis studied has refined by R.E Morgon and G.E Anderson in 1953 at university of Leeds' but had been a staple of military training for far long. The core objectives of circuit training are to increase muscular strength, muscular endurance, flexibility, and co-ordination. Studies at Baylor University and the Cooper institute have suggested the circuit training is the most time efficient way in which to improve cardiovascular endurance and muscular endurance.

The circuit work will increase general work capacity by improving ability to tolerate increasing levels of muscular fatigue. Over time the circuit training will have shorter and shorter rest intervals between exercise, thus maintaining elevated heart rates during the circuit workouts and helping the person to upgrade cardiorespiratory capacity Circuit efforts will enhance overall body strength, including the strength and resiliency of muscle, tendons, and ligaments, the integrity of joints, and the strength and density of supporting bone structures. The circuits will improve movement skill and body awareness, because a person will perform exercise that utilize body weight as the primary form of resistance The circuit programme will increase lean muscle mass by a moderate amount and decrease body-fat levels through high levels of energy expenditure.

Methodology:

The purpose of the study was to find out the twelve weeks of traditional circuit training on muscular endurance and cardio respiratory endurance of physically active youths. To achieve the purpose of the study, thirty (N=30) men students aged between 18 and 22 years studying S.N College chempazhanchy Trivandrum, Kerala, were randomly selected as subjects. They were equally divided into two groups. Group I – (n=15) experimental group

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underwent circuit training for three session per week for twelve weeks. Group II (n=15) acted as control group however they underwent their regular physical education actives programmes. The experimental group underwent the following training exercises are rope skipping, pushups, on the spot high knee action, back hyper extension, jumping jack, pull ups and low hurdle jump. Repetitions: 8 to 12, set: 2, Recovery: station-30 to 45 seconds, set-4to5 minutes, warming up and limbering down periods were excluded from the training. The data were collected prior and immediately after the training programme on body mass index (BMI) and percentage of body fat were measured by body composition analyzer. The ANCOVA (Thomas and Nelson, 1996) was used as statistical tool. The level of confidence fixed to the test the significance was 0.05.

Results:

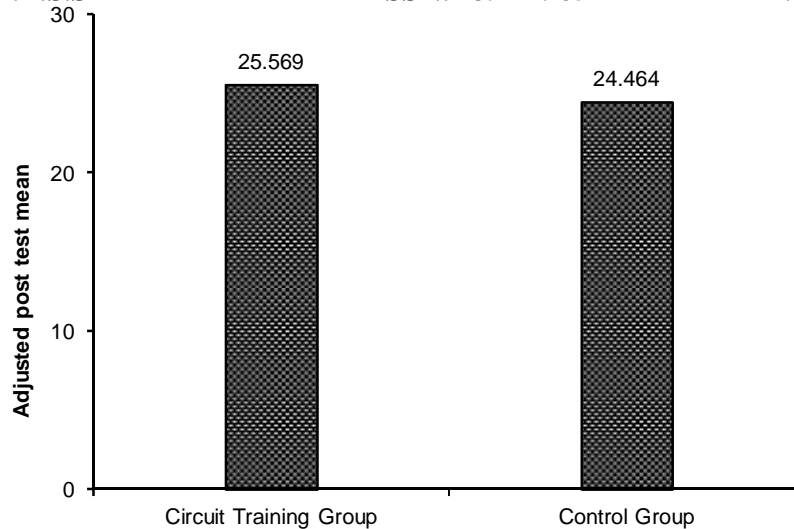
ANCOVA (Thomas and Nelson, 1996) was used to find out the training effect and the level of significance was fixed at 0.05.

Table 1. Results of ANCOVA for body mass index (BMI) and percentage of body fat

Variables	Test	Circuit training group	Control group	Sources of variances	Sum of squares	df	Mean square	Obtained 'F' ratio
Body mass index (BMI)	Adjusted post test mean	25.569	24.464	Between	9.072	1	9.72	22.86*
				Within	10.713	27	.397	
Percentage of body fat	Adjusted post test mean	16.522	18.957	Within	45.120	1	42.120	170.45*
				Between	7.147	27	.265	

* $P > 0.05$, TV: df 1 and 27=4.20

From the table the mean values are clearly stated twelve weeks of circuit training improves the body mass index (BMI) and decrease the percentage of body fat for experimental group than control group. Hence it was concluded that, twelve week of circuit training improves body mass index (BMI) and decrease the percentage of body fat.

**Discussion:**

The results of the study indicate that the twelve weeks circuit training had significantly improved the body mass index (BMI) and decrease the percentage of body fat. The control group did not show improvement of the selected variables. It was not involved in any of the specific training means. These findings are in line with the findings of Maiorana (2001); Geetmanet *et al.* (1978), ACSM (1995), Pollock *et al.* (1998), Manjupushpa (2006), Particia (2008), Shana (2010). It is inferred from the results of the present study that all the dependent variables were significantly altered due to the influence of twelve weeks of circuit training programme.

Conclusion:

The result of the study reveals that due to the impact of twelve weeks of circuit training the body mass index (BMI) and percentage of body fat of the physically active youths have significantly altered.

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