International Journal of Physical Education, Sports and Health 2016; 3(3): 630-632

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 4.69
IJPESH 2016; 3(3): 630-632

www.kheljournal.com
Received: 28-03-2016
Accepted: 30-04-2016

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Comparative Effect of continuous training and Interval Training on Body composition cardiovascular endurance and muscular endurance among inter collegiate athletes

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Abstract
Continuous training is when low- to mid-intensity exercises are performed for more than 20 minutes without resting intervals. Interval training is alternating between higher and lower intensity exercise. Interval training allows you to train at a higher intensity for a greater time than a single, continuous high intensity bout. The aim of the present study was to compare the effect of continuous training and interval training on body composition cardiovascular endurance and muscular endurance among intercollegiate athletes. To achieve the purpose, thirty male Inter collegiate athletes from ANJAC, Sivakasi were selected randomly as subjects. The age of the subjects ranged from 19 to 25 years. The experimental design selected for this study was pre and posttest randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent't' and test analysis of covariance (ANCOVA). Experimental group namely continuous training and interval training groups achieved significant improvement on body composition, cardiovascular endurance and muscular endurance. Significant differences were found between continuous training and interval training groups towards improving the selected criterion variables such as body composition, cardiovascular endurance and muscular endurance. Continuous training had a better difference on the improvement of selected dependent variables namely body composition, cardiovascular endurance and muscular endurance.

Keywords: Interval Training, Continous Training, Body composition and Endurance

1. Introduction
Continuous training is when low- to mid-intensity exercises are performed for more than 20 minutes without resting intervals. Generally, this type of training is used to prepare the body for sustained workouts such as marathon and triathlon, but can also be effective for more casual athletes. It allows the body to work from its aerobic energy stores to improve overall fitness and endurance.

Interval training is alternating between higher and lower intensity exercise. Interval training allows you to train at a higher intensity for a greater time than a single, continuous high intensity bout. I believe that interval training is the most important workout for any runner, from absolute beginner through to elite. Interval training provides greater results in fitness for the time/effort than any other approach, but remember to practice Safe Speed work.

1.1 Statement of the problem
The aim of the present study was to compare the effect of continuous training and interval training on body composition cardiovascular endurance and muscular endurance among intercollegiate athletes.

2. Hypotheses
1. There would be significant improvement on the selected dependent variables due to the effect of continuous training and interval training.
2. There would be significant difference on selected dependent variables among the selected Independent variables.

3. Methodology

3.1 Subjects

To achieve the purpose, thirty male Inter collegiate athletes from ANJA College, Sivaksi were selected randomly as subjects. The age of the subjects ranged from 19 to 25 years.

B) Selection of Variables

Dependent Variables: Body composition, Cardiovascular Endurance and Muscular Endurance were selected as dependent variables.

Independent variables: Continuous training and interval training were selected as independent variables.

c)Selection of Tests

Sl. No	Variables	Test Item	Unit of Measurements
1	Body composition	Skin fold caliber	In mm
2	Cardiovascular endurance	12 min cooper run/walk	In meters
3	Muscular Endurance	Bent Knee Sit Ups	In Numbers

Fig 1

D) Experimental design & statistical procedure

The experimental design selected for this study was pre and posttest randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' and test analysis of covariance (ANCOVA).

4. Results and Discussion

Results and Discussion

Analysis of the Data

MEAN AND DEPENDENT 't' TEST OF EXPERIMENTAL GROUP ON SELECTED VARIABLES

Variables	Mean	Continuous training group	Interval training group
Body composition	Pre test	10.60	11.27
	Post test	8.37	9.29
	"t" test	5.09*	6.42*
Cardiovascular endurance	Pre test	2303.06	2211.95
	Post test	2737.80	2437.60
	"t" test	12.693*	24.251*
Muscular endurance	Pre test	39.66	38.40
	Post test	52.33	48.53
	"t" test	25.13*	16.87*

*Significant at 0.05 level of confidence (14) = 2.14

Fig 2

Analysis of covariance (ancova) of experimental groups on selected variables

Results and Discussion Contnd…

Analysis of the Data

ANALYSIS OF COVARIANCE (ANCOVA) OF EXPERIMENTAL GROUPS ON SELECTED VARIABLES

Variables	Adjusted Post Test Mean		Sources of Variance	SS	df	Mean Square	F
	Continuous training Group	Interval training Group					
Body composition	7.92	9.85	Between	11.851	1	11.851	4.66*
			Within	66.004	26	2.539	
Cardiova-scular Endurance	2669.42	2460.52	Between	56817.90	1	56817.90	5.54*
			within	266447.21	26	10247.97	
Muscular endurance	52.51	47.92	Between	104.48	1	104.488	40.53*
			within	67.02	26	2.5578	

*Significant at .05 level of confidence, df (1, 26) = 4.22

Fig 3

5. Conclusion

1. Experimental group namely continuous training and interval training groups achieved significant improvement on body composition, cardiovascular endurance and muscular endurance.
2. Significant differences were found between continuous training and interval training groups towards improving the selected criterion variables such as body composition, cardiovascular endurance and muscular endurance.
3. Continuous training had a better difference on the improvement of selected dependent variables namely body composition, cardiovascular endurance and muscular endurance.

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