International Journal of Scientific Research and Modern Education (IJSRME)
International Peer Reviewed - Refereed Research Journal, Website: www.rdmodernresearch.com
Impact Factor: 7.137, ISSN (Online): 2455 - 5630, Volume 9, Issue 2, July - December, 2024

EFFECT OF INTERVAL AND ALTERNATE PACE RUNNING ON STRENGTH ENDURANCE

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Cite This Article: Dr. M. Senthil Thangaraj, "Effect of Interval and Alternate Pace Running on Strength Endurance", International Journal of Scientific Research and Modern Education, Volume 9, Issue 2, July - December, Page Number 61-62, 2024.

Abstract:

The purpose of the study was to find out the effect of interval and alternate pace running on strength endurance. To achieve this purpose of the study, forty five men students studying in the Pachaiyappa's College for Men, Kanchipuram, Tamil Nadu, were selected as subjects and they were divided into three equal groups of fifteen subjects each, such as interval training group, alternate pace running group, and control group. The interval training group and alternate pace running group underwent respective trainings for three days per week for twelve weeks in which the control group did not participate in any special training programme apart from the regular physical education activities as per the curriculum. The following variable namely strength endurance was selected as criterion variable and was tested by using bend knee sit ups test. All the subjects of three groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any, among the groups. Since, three groups were compared, whenever the obtained "F" ratio for adjusted post test was found to be significant, the scheffe's test to find out the paired mean differences, if any. The .05 level of confidence was fixed as the level of significance to test the "F" ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study revealed that there was a significant difference among interval training group, alternate pace running group and control group on strength endurance. And also the results of the study showed that there was a significant improvement on strength endurance due to interval training, and alternate pace running.

Key Words: Interval Training, Alternate Pace Running, Strength Endurance, Ancova, Scheffe's Test

Introduction:

Interval training as a programme of repeated running with a set of interval and restful jogging after each run. The period between runs must be long enough to allow the athlete sometime to recover from previous run, but not long enough to afford him complete recovery.

Doherty described two types of interval training. In the first type one run half or three quarter of the actual distance at competition. Speed or even faster, which require a longer interval of slow jogging. This is called "long interval training", which requires more endurance.

This is a running for long duration, which has speed of successive stretches according to a plan. At the simplest level, one might have a slow pace (HR = 130 - 150 beats/minute) for 1.0 Km alternating with a fast pace (HR = 170 - 180 beats/minute) for 0.5 ks.

Methodology:

The purpose of the study was to find out the effect of interval and alternate pace running on strength endurance. To achieve this purpose of the study, forty five men students studying in the Pachaiyappa's College for Men, Kanchipuram, Tamil Nadu, were selected as subjects and they were divided into three equal groups of fifteen subjects each, such as interval training group, alternate pace running group, and control group. The interval training group and alternate pace running group underwent respective trainings for three days per week for twelve weeks in which the control group did not participate in any special training programme apart from the regular physical education activities as per the curriculum. The following variable namely strength endurance was selected as criterion variable and was tested by using bend knee sit ups test. All the subjects of three groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance (ANCOVA) was used to analyze the significant difference, if any, among the groups. Since, three groups were compared, whenever the obtained "F" ratio for adjusted post test was found to be significant, the scheffe's test to find out the paired mean differences, if any. The .05 level of confidence was fixed as the level of significance to test the "F" ratio obtained by the analysis of covariance, which was considered as an appropriate.

Analysis of the Data:

The influence of interval training and alternate pace running on criterion variables were analyzed separately and presented below.

The analysis of covariance on strength endurance of the pre and post test scores of interval training group, alternate pace running group and control group have been analyzed and presented in table 1.

Table 1: Analysis of Covariance of the Data on Strength Endurance of Pre and Post Tests Scores of Interval Training, Alternate Pace Running and Control Groups

Test	Interval Training Group	Alternate Pace Running Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test								
Mean	35.25	34.98	35.11	Between	0.05	2	0.25	0.42
S.D.	1.22	1.31	1.28	Within	2.47	42	0.06	
Post Test								
Mean	43.51	40.22	35.44	Between	448.82	2	224.41	224.41*

S.D.	1.01	1.12	1.26	Within	42.00	42	1.00	
Adjusted Post Test								
Mean	43.55	40.31	35.45	Between	452.29	2	226.15	282.69*
				Within	32.85	41	0.80	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 42 and 2 and 41 are 3.222 and 3.226 respectively).

The table 1 shows that the adjusted post-test means of interval training group, alternate pace running and control group are 43.55, 40.31 and 35.45 respectively. The obtained "F" ratio of 282.69 for adjusted post-test means is greater than the table value of 3.226 for df 2 and 41 required for significance at .05 level of confidence on strength endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of interval training group, alternate pace running and control group on strength endurance.

Since, four groups were compared, whenever the obtained 'F' ratio for adjusted post test was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in table 2.

Table 2: The Scheffe's Test for the Differences between Paired Means on Strength Endurance

Interval Training Group	**Alternate Pace Running Group**	**Control Group**	**Mean Differences**	**Confidence Interval Value**
43.55	40.31	-	3.24*	1.651
43.55	-	35.45	8.10*	1.651
-	40.31	35.45	4.86*	1.651

* Significant at .05 level of confidence.

The table 2 shows that the mean difference values between interval training group, alternate pace running group, interval training group and control group and alternate pace running group and control group 3.24, 8.10 and 4.86 respectively on strength endurance which were greater than the required confidence interval value 1.651 for significance at .05 level of confidence.

The results of this study showed that there was a significant difference exist between interval training group and alternate pace running group interval training and control group and alternate pace running group and control group on strength endurance.

Conclusions:

- There was a significant difference among interval training group, alternate pace running group and control group on strength endurance.
- There was a significant improvement on strength endurance due to interval training group, alternate pace running group.

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