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Effect of walking jogging and running programme on percentage of body fat among middle aged men

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Abstract

In the present study, the influence of walking, jogging and running on percentage of body fat was investigated. The total numbers of subjects in this study were forty middle aged men comprised of both teaching and non-teaching staff members of Annamalai University. They were selected and divided into four groups randomly. They were named walking group, jogging group, running group and control group. The former three groups underwent their respective training and the last group acted as control. The data were collected on body weight among walking, jogging, running groups and control group before and after the training programme. The collected data were analyzed statistically by analysis of covariance (ANCOVA) and Scheffe's post-hoc test was used to test the paired mean differences. Walking, jogging and running training programme groups showed significant reduction in percentage of body fat as compared to control group. Jogging and running training programme groups showed insignificant difference in percentage of body fat indicating that one group is not better than other in bringing out significant changes.

Keywords: Walking, jogging, running, percentage of body fat

1. Introduction

Research shows that an inverse relationship exists between exercise and physical disability (Keysor JJ. 2003) ^[1]. In other words, people who exercise more have less disability, compared to people of the same age who don't exercise. In one study, walking as little as 1 mile per week slowed the decline in functionality that occurs with advancing age (Miller ME, *et al.* 2000) ^[2]. Jogging exercise has become one of the world's most popular sports. The ability to run is one of mankind's most beneficial abilities. And for many reasons, early running kept us free and safe from predators. Since civilization developed, running has continued to serve as a means of recreation and exercise, and there is no need to expound upon the proven health benefits of regular exercise.

Running can assist people in losing weight, staying in shape and improving body composition. Running increases metabolism. Different speeds and distances are appropriate for different individual health and fitness levels. For new runners, it takes time to get into shape. The key is consistency and a slow increase in speed and distance. While running, it is best to pay attention to how one's body feels. If a runner is gasping for breath or feels exhausted while running, it may be beneficial to slow down or try a shorter distance for a few weeks. If a runner feels that the pace or distance is no longer challenging, then the runner may want to speed up or run farther.

2. Materials and methods

2.1 statistical technique

The collected data were analysed statistically by using ANCOVA (analysis of covariance) to find out the influence of walking, jogging and running on percentage of body fat. Whenever, the obtained 'F' ratio for the adjusted post-test mean was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

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2.2 selection of subjects

To achieve the purpose of the study forty middle aged men teaching and non-teaching staff member who did not involve in any vigorous and special physical training programmer, working in various departments and administrative office of Annamalai University were randomly selected as subjects and their age ranged from 35 to 40 years.

2.3 selection of variable

In the present study, the investigator selected the percentage

of body fat as criterion variable. The selected criterion variable was measured by in body mass machine.

3. Analysis of the data

3.1 Percentage of body fat

The data collected during pre and post-tests among walking, jogging, running groups and control group on percentage of body fat have been analysed statistically and the results are shown in table-I.

Table 1: Analysis of covariance for pre- and post-test data on percentage of body fat among walking, jogging, running groups and control group

	Walking group	Jogging group	Running group	Control group	SOV	Sum of squares	DF	Mean square	'F' ratio
Pre-Test									
Mean	22.28	22.55	23.05	23.02	B:	4.21	3	1.41	0.63
SD	1.61	1.58	1.31	1.44	W:	79.77	36	2.22	
Post-Test									
Mean	19.76	20.33	21.49	23.15	B:	67.03	3	22.34	8.98*
SD	1.55	1.70	1.62	1.42	W:	89.53	36	2.49	
Adjusted Post-Test									
Mean	20.15	20.49	21.20	22.87	B:	43.12	3	14.37	18.05*
					W:	27.87	35	0.80	

* Significant at 0.05 level of confidence.

DF-degrees of freedom, SD-Standard Deviation, SOV-Source of Variance.

B-Between, W-Within.

The table value required for significance at 0.05 level with DF 3 & 56, and 3 & 55 are 2.87 and 2.87 respectively.

It is clear from table-I that the pre-test mean values of the percentage of body fat for walking group is 22.28, jogging group is 22.55 running group is 23.05 and control group is 23.02. The obtained 'F' ratio 0.63 is less than the table value of 2.87 required for DF 3 and 36 at 0.05 level of significance. It is inferred that there is statistically no significant variation among experimental groups and control group before the commencement of training programme.

The mean scores secured by the walking group, jogging group, running group, and control group on percentage of body fat after completion of training programme are, 19.76, 20.33, 21.49 and 23.15 respectively. The 'F' ratio of 8.98 arrived at by the statistical calculation is higher than the table value of 2.87 required for DF 3 and 36 at 0.05 level of

significance. It reveals that all the four groups have demonstrated significant variations on percentage of body at the end of training programme.

Table-I further shows that the adjusted post-test mean values for walking group is 20.15, jogging group is 20.49, running group is 21.20 and control group is 22.87, which resulted with an 'F' ratio of 18.05 and it is higher than the table value of 2.87 required for DF 3 and 35 at 0.05 level of significance. It is found that significant differences exist among the four groups on percentage of body fat after adjusting the initial mean differences on the post-test means.

In order to determine which of the paired means have significant differences, Scheffe's test was computed and it is presented in table-II.

Table 2: Scheffe's test for the differences between the adjusted post-test paired means of percentage of body fat

Adjusted Post-Test Means				Means Differences
Walking group	Jogging group	Running group	Control group	
20.15			22.87	2.72*
	20.49		22.87	1.38*
		21.20	22.87	1.67*
20.15	20.49			0.34
20.15		21.20		1.05
	20.49	21.20		0.71

* Significant at 0.05 level.

The confidence interval required for significance at 0.05 level is 1.17.

An examination of the table-8 indicates that the adjusted post-test mean difference of percentage of body fat between control group and walking group, control group and jogging group and between control group and running group are 2.72, 1.38 and 1.67 respectively which are higher than the confidence interval value of 1.17, at 0.05 level of significance.

It is inferred that the twelve weeks of walking, jogging and running training programme have significantly decreased the percentage of body fat in all the three experimental groups as compared to the control group.

table-II also shows the mean difference between walking group and jogging group is 0.34, walking group and running group is 1.05 which are lower than the confidence interval value 1.17 at 0.05 level of significance. Based on the result, it may be concluded that no significant difference exists in percentage of body fat these groups.

The mean difference between jogging group and running groups is 0.71 and it is lower than confidence interval value of 1.17 at 0.05 level of significance. The result shows no significant difference on percentage of body fat between these two groups.

4. Conclusions

Walking, jogging and running training programme groups showed significant reduction in body weight as compared to control group.

Jogging and running training programme groups showed insignificant difference in body weight indicating that one group is not better than other in bringing out significant changes.

5. Reference

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