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Effect of sand running and weight training on selected physiological variables of college men

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Abstract

Study was to determine the effect of Sand Running and Weight Training on selected physiological variables of college men. Sixty subjects (male) Alapuzha District, Kerala in the age group of 18 to 25 yrs were selected randomly as subjects for the study. The subjects were randomly assigned to Sand running group, weight training and Control groups each group consisted of 20 subjects. Aerobic Capacity and Resting Pulse Rate, Aerobic Capacity (coopers 12 minutes run/walk) and Resting Pulse Rate (pulse counted for one minutes) Participation in Eight weeks of sand Training and resistance training program resulted in improvement on aerobic capacity. Participation in Eight weeks of sand Training and resistance training program resulted in decrease of pulse rate.

Keywords: Sand running, weight training, physiological variables

Introduction

Running on the sand allows for a softer landing than running on pavement. As such, you'll put less stress on your ankles, knees, and hips. Lowering the impact on these weight-bearing joints may reduce your chance of impact-associated musculoskeletal injuries. If you haven't guessed by now, the extra effort and muscle engagement required to run on the beach means that it burns more calories compared to running on pavement. In fact, studies have shown that running on sand requires about one-and-a-half times more energy compared to running on a hard surface. Resistance training also called as strength training is used of resistance to muscular contraction to build strength, anaerobic endurance and size of skeletal muscle.

Statement of the problem

The purpose of the study was to determine the effect of Sand Running and Weight Training on selected physiological variables of college men.

Delimitation

1. The study was delimited to Sixty College students of Alapuzha District.
2. The study was delimited to the students between the age group of 18 to 25. The Training period was limited to Eight Weeks.
3. The study was further delimited to selected physiological Variables like Aerobic Capacity, Resting Pulse rate and Blood Pressure.

Limitation

1. All subjects were volunteers. Dealing with volunteers often makes it hard to choose a representative sample of the entire society of interest.
2. Lack of control over the life style, habits, diet and hereditary differences of the subjects will be considered as a limitation to the study.
3. Socio-economic and religious factors, which cannot be controlled by the scholar, might affect the responses of the students.

Hypothesis

It was hypothesized that there would be a significant effect of sand running and weight training on the selected Physiological variables of college men.

Selection of subjects

Sixty subjects (male) Alapuzha District, Kerala in the age group of 18 to 25 years were selected randomly as subjects for the study. The subjects were randomly assigned to Sand running group, weight training and Control groups each group consisted of 20 subjects.

Selection of variables

1. Aerobic Capacity
2. Resting Pulse Rate

Experimental design

1. Aerobic Capacity
2. Resting Pulse Rate

Test administration

1. Aerobic Capacity (coopers 12 minutes run/walk)
2. Resting Pulse Rate (pulse counted for one minutes)

Analysis of data and the result of the study

1. ANCOVA,
2. Scheffe's post hoc test to determine mean difference among the group.
3. The level of significance obtained by the analysis of variance was fixed at 0.05 level of confidence

Results and Discussion

Table 1: Descriptive statistics of aerobic capacity of the three groups

Groups		Mean	S.D	N
Sand Training	Pre test	45.94	4.59	20
	Post test	51.19	4.64	
Weight Training	Pre test	46.25	5.80	20
	Post test	48.21	5.98	
Control	Pre test	48.66	6.40	20
	Post test	48.52	6.34	

Table 2: Analysis of covariance on Aerobic capacity of sand Training, Weight training and control group

Source	df	Sum of squares of X	Sum of squares of Y	Sum of squares of X.Y	Sum of squares of Y.X	MSS Y.X	F ratio
Between Means	2	88.81	107.59	45562.3	278.985	139.49	61.03*
Within means	57	1820	1854.47	1773.59	127.985	2.28	
Total	59	1908.8	1962.07	47335.9			

Table 3: Scheffes post hoc test for mean difference between groups on aerobic capacity

Sand training	Weight training	Control	Mean difference	Critical Value
52.17	48.89		3.286	2.933
52.17		46.85	5.325	2.933
	48.89	46.85	2.038	2.933

Table 4: Descriptive statistics of resting pulse of the three groups

Groups		Mean	S.D	N
Sand Training	Pre test	59.84	5.02	20
	Post test	58.45	4.50	
Weight Training	Pre test	61.60	4.61	20
	Post test	61.10	4.62	
Control	Pre test	63.05	4.90	20
	Post test	62.95	4.93	

Table 5: Analysis of covariance on Resting Pulse Rate of sand Training, Weight training and control group

Source	df	Sum of squares of X	Sum of squares of Y	Sum of squares of X.Y	Sum of squares of Y.X	MSS Y.X	F ratio
Between Means	2	102.70	204.633	2432.56	20.07	10.003	24.176*
Within means	57	1342.30	1253.70	3127.89	23.171	.414	
Total	59	1445.00	1458.33	32789.9			

The calculated F value of 24.17 was greater than the table value of 3.159 at 0.05 level of confidence

Table 6: Scheffes post hoc test for mean difference between groups on resting pulse rate

Sand training	Weight training	Control	Mean difference	Critical Value
62.95	61.1		0.462	0.26156
62.95		58.45	1.436	0.26156
	61.1	58.45	0.974	0.26156

Conclusion

Participation in Eight weeks of sand Training and resistance training program resulted in improvement on aerobic capacity. Participation in Eight weeks of sand Training and resistance training program resulted in decrease of pulse rate.

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