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Effect Brisk Walking on Sand on Selected Physical Fitness Components among Middle Aged Women

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Abstract

The purpose of the study was to find out the effect of brisk walking on sand on selected physical fitness components such as strength endurance and flexibility. To achieve this purpose of the study, thirty middle aged women in and around Vellore District, Tamil Nadu, India were selected as subjects at random. The age of the subjects were ranged from 35 to 45 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as brisk walking on sand group (Group I) and control group (Group II). The brisk walking on sand group (Group I) underwent their respective training programme for three days per week for twelve weeks. Group II acted as control in which they did not undergo any special training programme apart from their regular day today activities. All the subjects of two groups were tested on selected criterion variable such as strength endurance and flexibility at prior to and immediately after the training programme by using bend knee sit ups and sit and reach test respectively. The analysis of covariance (ANCOVA) was used to analysis the significant difference, if any in between the groups. The level of significant to test the 'F' ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate. The results of the study revealed that there was a significant difference between brisk walking on sand group and control group on selected physical fitness components such as strength endurance and flexibility. Significant improvements on selected criterion variables were also noticed due to brisk walking on sand.

Keywords: Brisk Walking, Sand, Physical Fitness.

Introduction

Running on loose, dry sand takes 20 to 60 percent more energy than running on grass. Plus, soft sand absorbs some of the energy from your foot strike instead of pushing you forward, and forces you to activate more lower-leg muscles to stay upright. The result is levels of lactate, a marker of anaerobic fatigue, that spike two or three times higher than on firm surfaces. One study found athletes improved maximal oxygen uptake (VO_2) by 10 percent after eight weeks of sand workouts twice a week, compared with just six percent for those doing the same workouts on grass. Running on sand represents an entirely new training stimulus for your body. The sand is soft and gives way when you push off. This means that some of the elastic energy that is usually transferred to the next step is lost. In order to be able to run powerfully on sand, your body develops a smooth and efficient running technique with a midfoot strike and a stable push-off.

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Methodology

The purpose of the study was to find out the effect of brisk walking on sand on selected physical fitness components such as strength endurance and flexibility. To achieve this purpose of the study, thirty middle aged women in and around Vellore District, Tamil Nadu, India were selected as subjects at random. The age of the subjects were ranged from 35 to 45 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as brisk walking on sand group (Group I) and control group (Group II). The brisk walking on sand group (Group I) underwent their respective training programme for three days per week for twelve weeks. Group II acted as control in which they did not undergo any special training programme apart from their regular day today activities. All the subjects of two groups were tested on selected criterion variable such as strength endurance and flexibility at prior to and immediately after the training programme by using bend knee sit ups and sit and reach test respectively. The analysis of covariance (ANCOVA) was used to analysis the significant difference, if any in between the groups. The level of significant to test the 'F' ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate.

Analysis of the Data

The influence of brisk walking on sand on each physical variable were analyzed separately and presented below.

Strength Endurance

The analysis of covariance on strength endurance of the pre and post test scores of brisk walking on sand 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 brisk walking on sand group and control group

Test	Brisk Walking on Sand Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	19.53	19.07	Between	1.63	1	1.63	0.84
S.D.	1.45	1.00	Within	54.67	28	1.95	
Post Test							
Mean	22.07	19.27	Between	58.80	1	58.80	18.16*
S.D.	1.24	1.06	Within	90.67	28	3.24	
Adjusted Post Test							
Mean	21.92	19.41	Between	45.81	1	45.81	118.12*
			Within	10.47	27	0.39	

* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 1 and 28, 1 and 27 were 4.20 and 4.21 respectively)

The table 1 shows that pre-test means on strength endurance of brisk walking on sand group and control group are 19.53 and 19.07 respectively. The obtained "F" ratio of 0.84 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on strength endurance. The post-test means on strength endurance of brisk walking on sand group and control group are 22.07 and 19.27 respectively. The obtained "F" ratio of 18.16 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on strength endurance. The table I further shows that the adjusted post-test mean values of brisk walking on sand group and control group are 21.92 and 19.41 respectively. The obtained "F" ratio of 118.12 for adjusted post-test means is greater than the required table value of 4.20 for df 1 and 28 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 brisk walking on sand group and control group on strength endurance.

Flexibility

The analysis of covariance on flexibility of the pre and post test scores of brisk walking on sand group and control group have been analyzed and presented in Table 2.

Table 2

Analysis of covariance of the data on flexibility of pre and post tests scores of brisk walking on sand group and control group

Test	Brisk Walking on Sand Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	11.27	10.87	Between	1.20	1	1.20	0.92
S.D.	1.18	1.20	Within	36.67	28	1.31	
Post Test							
Mean	12.53	11.13	Between	14.70	1	14.70	8.55*
S.D.	1.02	0.88	Within	48.17	28	1.72	
Adjusted Post Test							
Mean	12.36	11.31	Between	8.00	1	8.00	40.70*
			Within	5.31	27	0.20	

* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 1 and 28, 1 and 27 were 4.20 and 4.21

respectively)

The table 2 shows that pre-test means on flexibility of brisk walking on sand group and control group are 11.27 and 10.87 respectively. The obtained "F" ratio of 0.92 for pre -test means is less than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on flexibility. The post-test means on flexibility of brisk walking on sand group and control group are 12.53 and 11.13 respectively. The obtained "F" ratio of 8.55 for post-test means is more than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on flexibility. The table 2 further shows that the adjusted post-test mean values of brisk walking on sand group and control group are 12.36 and 11.31 respectively. The obtained "F" ratio of 40.70 for adjusted post-test means is greater than the required table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence on flexibility. The results of the study indicated that there was significant difference between the adjusted post-test means of brisk walking on sand group and control group on flexibility.

Conclusions

1. There was a significant difference between brisk walking on sand group and control group on strength endurance.
2. There was a significant difference between brisk walking on sand group and control group on flexibility.
3. And also it was found that there was a significant improvement on selected criterion variables such as strength endurance and flexibility due to brisk walking on sand.

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