



Influence of Hill Running on Selected Speed Endurance and Abdominal Strength Among High School Athletes

KEYWORDS

Speed Endurance, abdominal strength.

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ABSTRACT

The purpose of the present study was to find out the improvement on selected speed endurance and abdominal strength due to the effect of hill running among high school athletes. To achieve the purpose of the study, 24 athletes participating in various sprint events were selected from the Govt Hr Sec School, Thuvankurichy, Trichy District at randomly. The age of the subjects ranged from 15 - 18 years. The selected subjects were divided into two equal groups. Group I underwent hill running for three days per week over a period of twelve weeks and Group II acted as control group. Speed Endurance (150m run test) and abdominal strength (Sit Ups Test) was selected as dependent variables. The pre test and post test randomized control group design was used as experimental design. Pre test data was collected before the training programme and post-test was collected immediately after the training session. The collected data were statistically analyzed through analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed to test the hypothesis. The result of the study reveals that there was significant improvement on selected dependent variables due to the effect of training and there was a significant difference between experimental and control groups of high school athletes.

Introduction

VanderZwaag (1988) stated, "Sport is a competitive physical activity, utilizing specialized equipments and facilities, with unique dimension of time and space, in which quest for records are of high significance". Physical fitness is being accepted as one of the vital objectives of physical education. The adaptive capacity of the Individual to the rigors of work is determined by his physical fitness. by nature human being are competitive and ambitious for the excellence in all athletes' performance. Not only every man but also every nation wants to show their supremacy by challenging the other man or nation. This challenge stimulates, inspires, and motivates the entire nation to sweat and strives to run faster, jump higher, throw faster and exhibit greater speed, strength, endurance and skills in the present competitive sports world.

Many training methods have been used to improve maximal sprint running performance by effecting changes in step length and step rate. Running on sloping surfaces is widely used in training for sprint running. It is unlikely in most mountainous regions that runners pursue routes that are without climbs or downhill terrain. (Mizrahi et al., 2000b; Yokozawa et al., 2005). Different surfaces offer different kinetic responses during running. (Kim & Voloshin, 1992). Impact force and loading rate are expected to be larger during downhill running compared to level running due to the greater potential energy of the body's center of mass caused by decline grade. (Yokozawa et al., 2005). Many distance runners use hill training as a means of improving aerobic fitness, stamina and strength. (Tulloh, 1998).

Purpose of the Study

The aim of the present study was to determine The Influence of hill running on selected speed endurance and abdominal strength among high school athletes.

Methodology

Selection of subjects

To achieve the purpose of the study, 24 athletes participating in various sprint events were selected from the Govt Hr Sec School, Thuvankurichy, Trichy District at randomly. The age of the subjects ranged from 15-18 years. The selected subjects were divided into two equal groups. Group I underwent hill running for three days per week over a period of twelve weeks and Group II acted as control group.

Selection of variables and tests

The following variables were selected for this study such as,

1. Speed Endurance(150m run test),
2. Abdominal strength (Sit Ups Test).

Statistical design

The pre test and post test randomized control group design was used as experimental design in which 24 men football players were divided into two groups of twelve each on random basis. No attempt was made to divide the groups in any manner. Subjects are selected based on their interest; selected subjects were clearly instructed about the research by the researcher. Pre test data was collected before the training programme and post-test was collected immediately after the training session.

Statistical analysis

The collected data were statistically analyzed through analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed to test the hypothesis.

Analysis of Data

ANALYSIS OF COVARIANCE ON CRITERION VARIABLES OF EXPERIMENTAL GROUPS

Criterion Variables	Adjusted post test means		Source of Variance	Sum of Squares	df	Mean Squares	F-Ratio
	Experimental Group	Control Group					
Speed Endurance	21.9	22.58	B	2.47	1	2.47	10.98*
			W	4.72	21	0.22	
Abdominal strength	26.1	19.06	B	265.62	1	265.62	91.72*
			W	60.82	21	2.9	

*Significant at .05 level of confidence.

(The table value required for significance at 0.05 levels with df 1 and 21 is 4.32).

From the Table, the obtained F-ratio for adjusted post test means were 10.98* and 91.72* respectively which are more than the table value of 4.32 for df 1 and 21 required for significant at 0.05 level of confidence. The results of the study indicate that there was significant difference between the adjusted post test means of experimental and control groups on the development of speed endurance and abdominal strength of school athletes.

Conclusions

From the obtained results the following conclusions were drawn.

1. It was found that there was significant improvement on Speed endurance and abdominal strength of experimental group due to the effect of training.
2. And also it was concluded that there was significant difference on experimental group then compare to control group due to the effect of training.

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