

## EFFECT OF CONCURRENT WEIGHT AND SAND RUNNING ON SELECTED PHYSICAL FITNESS PARAMETERS

Dr. P. Kumaravelu<sup>1\*</sup>, Dr. Deb Kumar Das<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Physical Education, Tamil Nadu Physical Education and Sports University (Melakottaiyur Post, Chennai- 600127, Tamil Nadu, India.

E-mail: [drpkv007@gmail.com](mailto:drpkv007@gmail.com)

<sup>2</sup>Guest Lecturer, Department of Yoga, Tamil Nadu Physical Education and Sports University (TNPESU), Melakottaiyur, Chennai- 600127, Tamil Nadu, India.

E-mail: [drdebkumar.yoga@gmail.com](mailto:drdebkumar.yoga@gmail.com)

**\*Corresponding author:** Dr. P. Kumaravelu\*, Assistant Professor, Department of Physical Education, Tamil Nadu Physical Education and Sports University, Melakottaiyur Post, Chennai-600127, Tamil Nadu, India. E-mail: [drpkv007@gmail.com](mailto:drpkv007@gmail.com)

### ABSTRACT

The purpose of the present study was find the effect of concurrent weight and sand running on selected physical fitness parameters namely leg strength and strength endurance. For this purpose of the study, thirty men students studying bachelor's degree in Department of physical education, Tamil Nadu were selected as subjects. The age group of 18-24 years were selected. They were divided into two equal groups of fifteen subjects each. In which group – I underwent concurrent weight and sand running [weight training for first six weeks and sand running for second six weeks] and group-II acted as control, who did not participate in any special training. The following variable namely leg strength endurance were selected as criterion variable. The selected criterion variables namely leg strength and strength endurance were test data were collected with the subjects at prior to and after the training period on selected criterion variables. The analysis of covariance (ANCOVA) was used to find out the significant difference, if any among the groups separately. In all the cases .05 level of confidence was fixed to test the significance, which was considered as an appropriate. It was concluded from the results that the concurrent weight and sand running group have improved leg strength and strength endurance significantly.

### KEY WORDS:

Concurrent Weight and Sand Running Leg Strength, and strength Endurance.

### INTRODUCTION:

Training is the process of preparation for some task. The "training is widely used in sports. But there is some disagreement among coaches and sports scientists regarding the meaning of the word. Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as at the contest in sports competition. Butcher considers physical education as "an integral part of total education

process which has its aim the development of physically, mentally, emotionally and socially fit citizen through the medium of physical activities which a view of realizing these outcomes.

## METHODOLOGY

The purpose of the present study was to find the effect of concurrent weight and sand running on selected physical fitness parameters namely leg strength and strength endurance. For this purpose of the study, thirty men students studying bachelor's s degree in Department of physical education,

Tamil Nadu were selected as subjects. The age group of 18-24 years were selected. They were divided into equal groups of fifteen subjects each. In which group-I underwent concurrent weight and sand running [weight training for first six weeks and sand running for second six weeks] and group-II acted as control, who did not participate in any special training. The following variables namely leg strength and strength endurance were selected as criterion variables. The selected criterion variables namely leg strength endurance were tested by using leg lift with dynamometer and bend knee sit ups separately. The pre and post test data were collected with the subjects at prior to and after the training period on selected criterion variables. The analysis of covariance (ANCOVA) was used to find out the significant difference, if any among the groups separately. In all the cases .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

## ANALYSIS OF THE DATA

The influence of concurrent weight and sand running on each criterion variables were analyzed separately and presented below.

## LEG STRENGTH

The analysis of covariance on leg strength of the pre and post test scores of concurrent weight and sand running group have been analyzed and presented in Table I.

**TABLE I**

### **ANALYSIS OF COVARIANCE OF THE DATA ON LEG STRENGTH OF PRE AND POST TESTS SCORES OF CONCURRENT WEIGHT AND SAND RUNNING AND CONTROL GROUPS**

TEST	Concurrent Weight and sand running group	Control group	Source of variance	Sum of squares	df	Mean Squares	Obtained 'F' Ratio
Pre test							
Mean	93.24	92.89	Between	0.81	1	0.81	2.63
S.D	2.94	2.96	Within	8.62	28	0.37	
Post test							
Mean	98.11	92.92	Between	2.47	1	2.47	7.48*
S.D	2.71	2.95	Within	9.24	28	0.33	
Adjusted post test							
Mean	98.24	92.91	Between	3.11	1	3.11	9.147*
			Within	9.199	28	0.340	

\*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 4.215 respectively)

The table I shows that the adjusted post-test means of concurrent weight and sand running group and control group are 98.24 and 92.91 respectively on leg strength. The obtained “F” ratio of 9.147 for adjusted post -test means is more than the table value of 4.215 for df 1 and 27 required for significance at .05 level of confidence between the adjusted post-test means of concurrent weight and sand running group on leg strength.

### Strength Endurance

The analysis of covariance on strength endurance of the pre and post test scores of concurrent weight and sand running running group and control group have been analysed and presented in Table II.

**TABLE II**  
**ANALYSIS OF COVARIANCE OF THE DATA ON STRENGTH ENDURANCE OF PRE AND POST TEST SCORES OF CONCURRENT WEIGHT AND SAND RUNNING AND CONTROL GROUPS**

TEST	Concurrent Weight and sand running group	Control group	Source of variance	Sum of squares	Df	Mean Squares	Obtained ‘F’ Ratio
Pre test							
Mean	32.88	33.01	Between	0.141	1	0.141	0.259
S.D	0.18	0.19	Within	15.241	28	0.544	
Post test							
Mean	39.14	33.12	Between	4.897	1	4.897	8.744*
S.D	0.09	0.18	Within	15.241	28	0.56	
Adjusted post test							
Mean	39.21	33.11	Between	6.48	1	6.48	10.78*
			Within	16.241	27	0.601	

\*Significant at .05 level of confidence.

(The table value 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 II shows that the adjusted post-test means of concurrent weight and sand running group and control group are 39.21 and 33.11 respectively on strength endurance. The obtained “F” ratio for of 10.78 for adjusted post -test means of concurrent weight and sand running group on strength endurance.

### CONCLUSIONS

1. There was a significant difference between concurrent weight and sand running group and control group on leg strength endurance.
2. And also it was found that there was a significant improvement on selected criterion variables such as leg strength endurance due to concurrent weight and sand running.

## REFERENCE

- Ajmer Singh et al., *Essential of Physical Education* (New Delhi: Kalyani Publishers, 2003).
- Ardy Friend Berg, *The Fact on File Dictionary of Fitness*, (USA: The Time Minor Publications, 1994).
- Barry L. Johnson and K. Jack Nelson, *Practical Measurements for Evaluation in Physical Education*, (3<sup>rd</sup> Edn.) (Delhi: Surjeet Publication, 1988).
- Carl E. Kalls and Danie, D. Amheins, *Modern principles of Athletic Training*, (Saint Louis: The C.V. Mosby Company, 1967).
- Clayne R. Jenson and Cynthia C. Hirt, *Measurement in Physical Education and Athletics* (New York: Mac Millan Publishing Co., Inc., 1980).
- Edwin A. Fleishman, *The Structure and Measurement of Physical Fitness*, (Englewood Cliffs: Prentice Hall Inc., 1976).
- Frank W. Dick, *Sport Training Principle*, (Champaign, Illinois: The Human Kinetics Publishers, 1997).
- Harrison H. Clarke, *Application of Measurement of Health and Physical Education*, (Englewood cliffs, N.J. Prentice Hall, Inc., 1976).
- Johnson and Nelson, *Practical Measurement for Evaluation in Physical Education*, 3<sup>rd</sup> ed. (Delhi: Publication 1982).
- Krishnamurthy, V. and Parameswara Ram, *Educational Dimensions of Physical Education*, (New Delhi: Surjeet Publications, 1980).
- Laurence E. Morehouse and Augustus T. Miller, *Physiology of Exercise*, (St. Louis: The C.V. Mosby Company, 1963).
- Olilive, Bruce and Tutko Thomas, *A Sport: If you want to Barild Character, Try Something Else, Psychology Today*, 1971.
- Sidhu and N.M. Mall, *Modern Perspectives on physical Education and Sports Science*, (New Delhi: Haram Publication, 1986).
- Thomas Kirk Cureton and John Brown, *Physical Fitness Appraisal and Guidance*, (U.S.A: The C.V. Mosby Company, 1947).