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EFFECTS OF HARNESS RUNNING, SAND RUNNING, WEIGHT - JACKET RUNNING AND WEIGHT TRAINING ON THE PERFORMANCE OF ENDURANCE AMONG THE 14-18 YEARS MALE SOCCER PLAYERS

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Abstract

Background: The purpose of the study was to find the effects of Harness Running, Sand Running, Weight-Jacket Running and Weight training on the performance of Endurance among the Burdwan District School going soccer players.

Method-100 male students from the different schools of the Burdwan district were randomly selected as subjects and their age were 14-18 years served as Harness Running Group (HRG), second group served as Sand Running Group (SRG), third group served as Weight-Jacket Running Group (WJRG), fourth group served as Weight Training Group (WTG) and the fifth group served as Control Group (CTG). Ten weeks training were given for experiment accordingly. The control group was not given any training except of their routine. The selected subjects were measured the physical fitness component of Cardiovascular Endurance. ANCOVA was calculation for statistical treatment.

Finding: From the finding implies that the Weight Training Group was more effective in increasing than all other training programs after ten weeks of training on Endurance.

Conclusions: Weight Training Group showed higher adjusted post-test mean difference with Control Group in comparison to other three training groups which is 0.07, higher than the critical difference 0.04 required being significant at 0.05 levels.

Keywords: *Harness Running, Sand Running, Weight-Jacket Running, Weight training, Endurance*

Introduction

The game of soccer requires considerable amount of physical fitness and mastery in skills. Now the question arises in front of every individual, what do the term physical fitness deal with fitness is very specific to the sports or activities which a person does for e.g. the fitness required to be a 100 mts. Sprinter is entirely different to that needed to be a marathon runner. Similarly, the fitness required to play soccer is different to the need of rugby, hockey or squash. Soccer players must have good endurance, good lower and upper body strength, good flexibility, agility and speed. Strength training is one form or the other is an integral part of sports and physical fitness culture. Strength training is utilized by the young and old for a variety of purposes.

Almost all athletic programmed rely on the benefits of increased strength for improvement in athletic performance. The game of soccer requires tremendous physical fitness, as the duration of the game is ninety minutes in which basic movements such as kicking, running, jumping, throwing, dozing etc. are involved. Endurance plays a vital role in order to play continuously for ninety minutes.

Strength is also essential for powerful kicking, tackling, throwing, heading and so on. For dribbling frequent and rapid change of body direction i.e., agility is an essential element. Flexibility plays a major role for reducing the chance of injury as well as perfection of skills. Speed, coordination, reaction time and balance are also important exhibiting the modern skillful soccer performance. "Soccer is a game which calls for strenuous, continuous thrilling action and therefore, appeals to the youth the world over. The skills involved in the game are simple, natural and yet are highly stimulating and satisfying to anyone who participates in the game."

The skills include kicking, running, jumping, throwing, dozing and so on. In many sports like football the skill in top performance may call for 60 kinds of mobilization of energy. Football is for instance, an endurance activity as it is played for 45 minutes duration at a stretch in each half of a match. At the same time the play involves short sprint and powerful kicks frequently and this involves sprint and explosive activities. Then an athlete may require aerobic training or anaerobic training, and most often, 60 kinds of training in different proportions depending upon sports for which he is being trained to play high competitive level.

Statement of the Problem

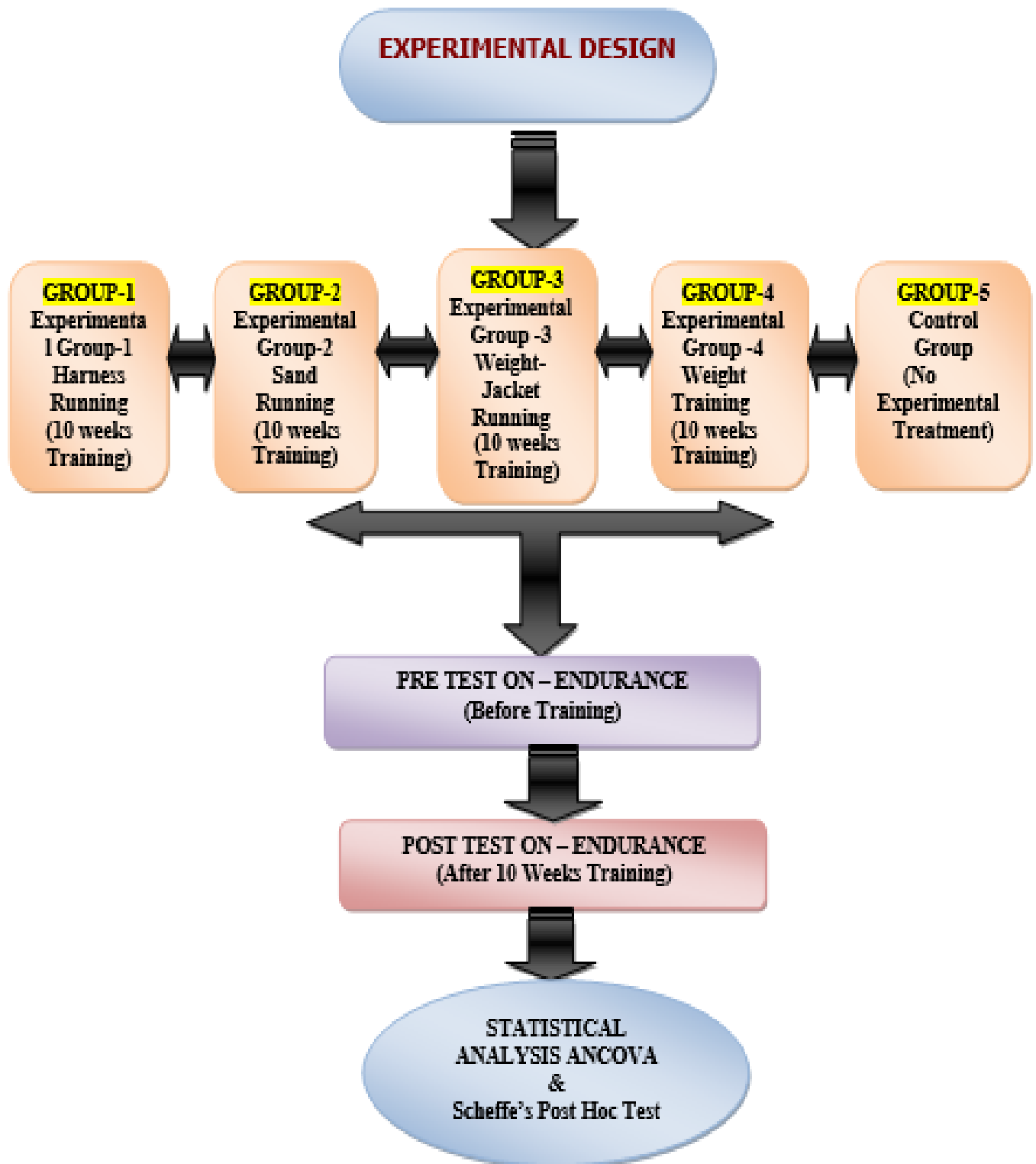
The purpose of the study was to find the effects of Harness Running, Sand Running, Weight-Jacket Running and Weight training on the performance of Endurance among the 14-18 years male soccer players.

Training Schedule

For the present study the experimental design was adopted on the basis of random group design. Equal numbers of tasks were assigned randomly to five groups of twenty subjects each. The experimental treatments were also assigned randomly for the four experimental groups (A, B, C, D) and control group E. The four experimental groups were administered four different kinds of training programmers for the development of physical fitness and soccer skills. The first group was trained with the method of Harness Running (group-A) the second group with the Sand Running (group-B), the third group with Weight – Jacket Running (group-C), the fourth group with Weight – Training (group-D). The distance chosen for each of the training was 80 meters. The training session was conducted thrice a week i.e. on Monday, Wednesday, Friday, for Harness Running and Sand Running Group and Tuesday, Thursday, Saturday for Weight – Jacket Running Group and Weight–Training group. Test programmers were taken before and after an experimental period of 10 weeks. The subjects were advised not to take part in any voluntary sports programmers or unusual physical exhaustion so that physical activities remained uniform for all the groups chosen for the study. All the tests were administered from 6-30A.M.to about 9-30 A.M. in football ground. The physical fitness and soccer skill test administered to the subjects and explained as under.

Statistical Analysis

The differences between the initial and final test in Endurance among were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not. The Scheffé's post hoc test was used to find out the paired means significance difference.



Result and Discussion

Results on 600 yard Run/Walk

The statistical analysis comparing the initial and final means of 600 Yard Run/Walk due to the purpose of the study was to find the effects of Harness Running, Sand Running, Weight-Jacket Running and Weight training on the performance of Endurance among the 14-18 years male soccer players .600 yard Run/Walk are presented in Table I.

Table – 1

ANALYSIS OF CO-VARIANCE OF FOUR EXPERIMENTAL GROUPS AND CONTROL GROUP ON 600 YARD RUN/WALK

Mean	Harness running group	Sand running group	Weight jacket running group	Weight training group	Control group	Sum of square		df	Mean sum of square	F-ratio
						A	W			
Pre test	1.92	1.97	2.06	2.07	2.10	A	0.477	4	0.11	1.23
						W	9.18	95	0.09	
Post test	1.89	1.95	2.05	2.01	2.11	A	0.55	4	0.13	1.46
						W	8.92	95	0.093	
Adjusted post test	2.00	2.00	2.01	2.03	1.96	A	0.05	4	0.01	2.68*
						W	0.49	94	0.005	

*Significant at 0.05 level $F_{.05}(4, 95) = 2.46$ $F_{.05}(4, 94) = 2.47$ $N=100$ (number of subjects) A= Among mean variance

Table 1 and figure 1 reveals insignificant difference in 600 Yard Run/Walk ability among four experimental and one control group Soccer players in pre as well as post-test phases ('F' = 1.23 for the pre-test and 1.46 for post-test means < 2.47 at 4, 95 df) whereas significant difference is observed in adjusted post-test mean ('F' = 2.68 > 2.47 at 4, 95 df) which was significant at 0.05 level of confidence .

In the case of pre-test mean almost uniform mean values of four experimental groups i.e. Harness Running Group (1.92), Sand Running Group (1.97), Weight Jacket Running Group (2.06), Weight Training Group (2.07) and Control Group (2.10) are found and thereby indicated no significant difference.

In the case of post-test means also except the mean values of Harness Running Group (1.89), Sand Running Group (1.95), Weight Jacket Running Group (2.05), Weight Training Group (2.01) and Control Group (2.11) are found, which also indicate no significant difference among the group.

On other hand in the case of adjusted post-test mean remarkable significant difference in 600 Yard Run/Walk mean value among four experimental group and one control group soccer players are noticed, where Weight Training Group mean value (2.03) is found to be highest which is followed by mean value of Weight Jacket Running Group (2.01) in comparison to the mean value of Harness Running Group (2.00), Sand Running Group (2.00) and Control Group (1.96).Which were significant at 0.05 level of confidence with the df at 4, 95

As the significance difference in 600 Run/Walk among four experimental and one control group in adjusted post-test mean are observe. The scheffe's post-hoc-test was computed to find out the existence of significance difference in pair group means, which is presented in table 2.

Table – 2

POST HOC MEAN DIFFERENCE COMPARISON OF FOUR EXPERIMENTAL GROUPS AND CONTROL GROUP ON 600 YARD RUN/WALK

Harness running group	Sand running group	Weight jacket group	Weight training group	Control group	Mean difference	Critical difference
2.00	2.00				0	0.04
2.00		2.01			0.01	0.04
2.00			2.03		0.03	0.04
2.00				1.96	0.04	0.04
	2.00	2.01			0.01	0.04
	2.00		2.03		0.03	0.04
	2.00			1.96	0.04	0.04
		2.01	2.03		0.02	0.04
		2.01		1.96	0.05*	0.04
			2.03	1.96	0.07*	0.04

*Significant at 0.05 level

Table 2 reveals significant difference in five out of ten paired group means.

The paired group means, which showed significant difference between Weight Jacket Running Group and Control Group ($0.05 > 0.04$) between Weight Training Group and Control Group ($0.07 > 0.04$) at 0.05 level of confidence.

No significant difference between paired group mean namely between Harness Running Group and Sand Running Group ($0 < 0.04$) between Harness Running Group and Weight Jacket Running Group ($0.01 < 0.04$) between Harness Running Group and Weight Training Group ($0.03 < 0.04$) between Harness Running Group and Control Group ($0.04 = 0.04$) between Sand Running Group and Weight Jacket Running Group ($0.01 < 0.04$) between Sand Running Group and Weight Training Group ($0.03 < 0.04$) between Sand Running Group and Control Group ($0.04 = 0.04$) between Weight Jacket Running Group and Weight Training Group $0.02 < 0.04$) are observed.

The Graphical representation of mean comparison of 600 Yard Run/Walk for four experimental group and one control group after ten weeks of experimental programmed is presented in figure – 1.

MEAN COMPARISON OF FOUR EXPERIMENTAL GROUPS AND CONTROL GROUP ON 600 YARD RUN/WALK

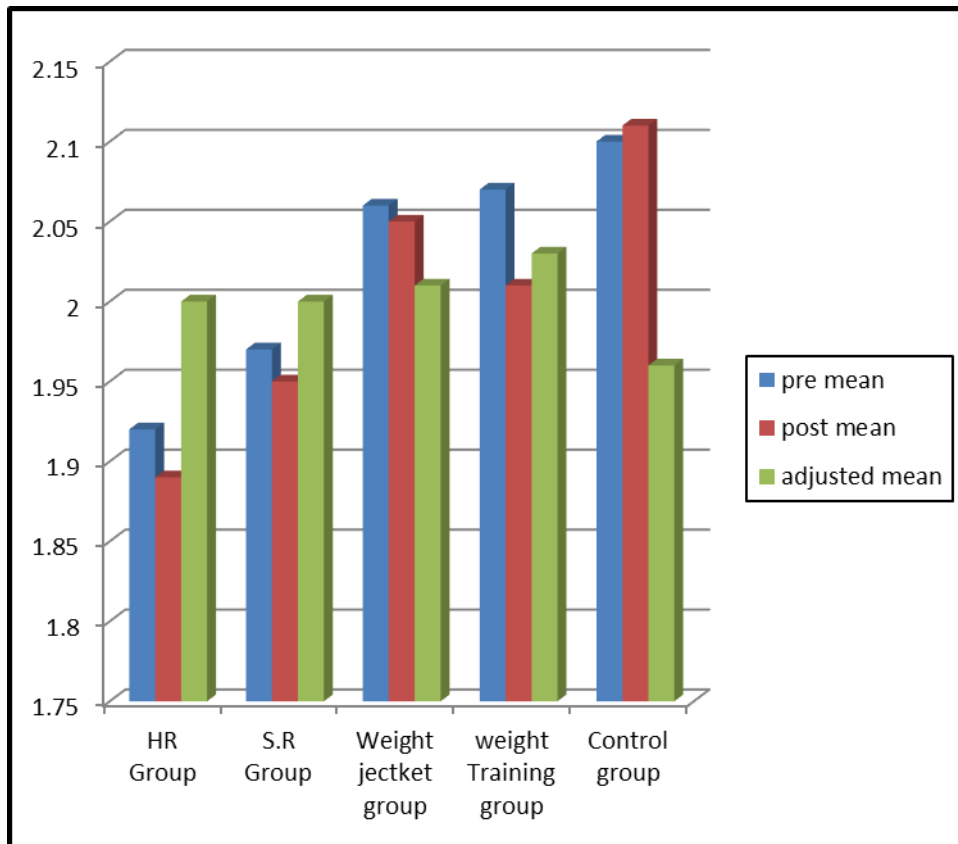


Figure- 1

Here it is clearly observe that the highest running time was taken by Control Group in pre-test data followed by Weight Training Group, Weight Jacket Running Group, Sand Running Group and Harness Running Group respectively. The highest running time was taken by Control Group in post-test data followed by Weight Jacket Running Group, Weight Training Group, Sand Running Group and Harness Running Group respectively. The lowest adjusted mean value was found in Control Group followed by Harness Running Group, Sand Running Group, Weight Jacket Running Group and Weight Training Group respectively.

Discussion of Finding

Table-2 reveals significant difference in five out of ten paired group mean.

The Paired group means which, showed significant difference are between Weight Training Group and Harness Running Group between Weight Training Group and Sand Running Group between Weight Training Group and Weight Jacket Running Group and between Weight Training Group and Control Group.

In all the cases of significant difference the presence of Weight Training Group (2.03) is common – i.e. Weight Training Group and Harness Running Group (2.03 > 2.00) Weight Training Group and Sand Running Group (2.03 > 2.00) Weight Training Group and Weight Jacket Running Group (2.03 > 2.01) Weight Training Group and Control Group (2.03 > 1.96). The mean value of Weight Training Group is responsibly higher

than- that of the Harness Running Group, Sand Running Group, Weight Jacket Running Group and Control Group. The mean value of Weight Jacket Running Group is found to be second best followed by Harness Running Group, Sand Running Group and Control Group. Weight Training Group showed higher adjusted post-test mean difference with Control Group in comparison to other three training groups which is 0.07, higher than the critical difference 0.04 required being significant at 0.05 levels. Here it is interesting to know that the cardio-vascular endurance of four experimental groups was improved significantly.

Conclusions

Within the limitations imposed by the subjects and experimental condition and on the basis of the results of this study, the following conclusions were drawn. The Endurance ability of Weight training group was more effective than all other training groups and declines the time in 600-yard Run/Walk after 10 weeks training programmed and it may be due to the motivation factor of the subjects.

References

1. Besuard, V, B. (1963). A comparison of two programmes of weight training in regard to their effects upon the development of muscular strength and endurance. *Completed Research in Health, Physical Education and Recreation*, 5, 89.
2. Colfer, G. R. (1981). Strength Training Terminology, *Athletic Journal*, 61, 26.
3. Corbett, J, J. (1970). The effects of different frequencies of weight training on muscular strength. *Completed Research in Health, Physical Education and Recreation*, 12, 273.
4. Edward, K. C. (1950). The Effect of Systematic weight Training on Power, Strength and Endurance, *Research Quarterly*, 21, 83.
5. Harli'A, H. (1968). The Effect of Selected Progressive Resistance Running Programme on Circulo-respiratory Efficiency Power and Free Running Speed. *Completed Research in Health, Physical Education and Recreation*, 10, 98.
6. Harre, D. (1982). *Principle of Sports Training*. Sportverlag Berline, 5-20.
7. Hooks, G. (1962). *Application of Weight Training to Athletics*, Prentice Hall, 19.
8. Thomas, J. P. (1964). *Let Us Coach Soccer*, Madras, The Y. N. C. A. Collage of Physical Education, A Project of the National Council of YMCAs of India, 1-46.
9. Kenneth, S. O. (1963). A comparison of conditioning exercise relative to performance in rope climbing, *Completed Research in Health, Physical Education and Recreation*, 5, 39.
10. Warner, R. J. & Duskjrj, E. R. (1956). *Science and Medicine of Exercise and Sports*, Prentice Hall Inc.