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Original article

EFFECT OF SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES OF COLLEGE MALE HANDBALL PLAYERS

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Abstract

The study was to find out the effect of specific skill training with plyometric training and specific skill training with interval training on selected physiological variables of college male handball players. For this study sixty (N=60) college male handball players studying in Aditya college of physical education and Aditya college engineering surampalem, Andhra Pradesh were selected randomly as subjects. Their age ranged from 18 to 25 years. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent specific skill training with plyometric training (n=15), Group-II underwent specific skill training with interval training (n=15) and Group-III underwent Combined training (n=15) and Group IV Control group (15). The data were analyzed statistically by using analysis of covariance (ANCOVA). Whenever the 'F'ratio for adjusted post test means was found to be significant, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant.

*Key Words***:** heart rate ; body mass index

Introduction

Plyometric training is one of the most effective method for improve explosive power. A wide variety of athletes can benefit from power training, particularly if it is followed by a strength training programme. The purpose of plyometrics is to improve the player's capacity to apply more force more rapidly. **(Bard Adams, 2008)**

Statement of the problem

The purpose of the present study is to find out the effect of specific skill training with plyometric training and specific skill training with interval training on selected physiological variables of college male handball players.

Methodology

The subjects were selected randomly from Aditya College of physical education and Aditya College of Engineering, Surampalem, Andhra Pradesh. Sixty college male handball players aged from 18 to 25 years were selected as subjects for the purpose of this study. They were dived into four groups of fifteen each. Group I underwent specific skill training with plyometric training, Group II underwent specific skill training with interval training, Group III underwent combined training, for a period of twelve weeks and Group IV acted as control group.

Experimental design

The study mainly aimed to find out the effect of specific skill training with plyometric training and specific skill training with interval training on selected physiological, variables of college male handball players. For this study, sixty college male handball players were selected from Aditya College of physical education and Aditya engineering college, Surampalem, Andhra Pradesh. The age ranged from 18 to 25 years. The group underwent twelve weeks of specific training. The training was conducted five days in a week and the training session was from 4:30 pm to 5:30 pm for twelve weeks. All the subjects were tested in the selected motor fitness variables namely heart rate and body mass index. The pre- test was taken before the start of specific training and post-test was taken after the training was completed.

Training Procedure

In this study sixty (60) subjects were randomly selected from Aditya College of physical education and Aditya engineering college, surampalem Andhra Pradesh. They were divided into four groups, three groups were experimental groups and the other one

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was control group. Specific skill training with Interval training, specific skill training with Plyometric training and combined training was given for 12 weeks, 3 alternative days in a week, one session one hour per a day.

Statistical technique

To find out the difference between pre – test of each group, paired 't' test was used. Analysis of covariance (ANCOVA) was computed because the subjects were selected random, but the groups were not equated in relation to the factors be examined. Hence the difference between means of the four groups in pre – test had to be taken into account during the analysis of the post – test difference between the means. This study was applied by the application of the analysis of covariance, where the post means were adjusted for difference in the initial means, and the adjusted means were tested for significance.

TABLE - 1
MEAN AND STANDARD DEVIATION FOR THE DATA ON HEART RATE AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS

Training	Mean	S.D	't' ratio
Group I underwent specific skill training with plyometric training	73.86	0.743	9.727*
Group II underwent specific skill training with interval training	74.66	1.30	5.916*
Group III Combined training	73.96	0.703	6.971*
Group IV Control group	74.56	0.258	1.000

TABLE - 2
ANYALYSIS OF CO VARIANCE FOR THE DATA ON HEART RATE AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS

Source of variance	Sum of Squares	D f	Mean Squares	Obtained 'F' ratio	Table value
Between Subjects	31.278	3	10.426	17.148*	2.77
Within subjects	33.440	55	0.608		

*Significant at 0.05 level

Table value required for significant at .05 levels for d f 3 and 55 is 2.77.

Table 2 shows that the obtained "F" ratio for heart rate was 17.148. It was greater than the required table value of 2.77 at 0.05 level of significant with d f 3 and 55. Result of the study reveals that there was significant difference among college male handball players on heart rate variable.

FIGURE - 1
BAR DIAGRAM SHOWING THE MEANS FOR THE DATA ON HEART RATE AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS

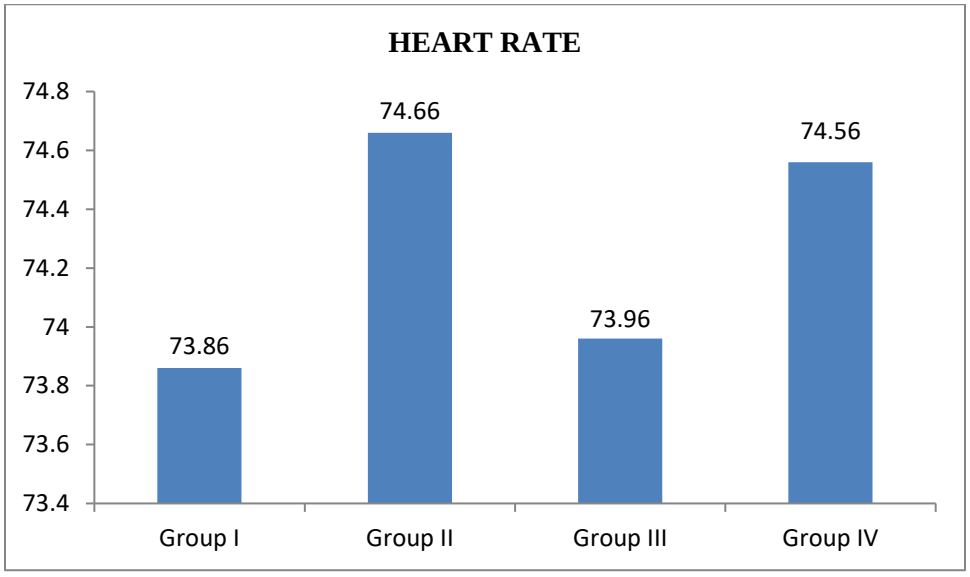


TABLE - 3
MEAN AND STANDARD DEVIATION FOR THE DATA ON BODY MASS INDEX AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS

Training	Mean	S.D	't' ratio
Group I underwent specific skill training with plyometric training	25.08	0.483	15.903*
Group II underwent specific skill training with interval training	24.98	0.87	9.679*
Group III Combined training	24.29	1.121	10.202*

Group IV Control group	26.23	0.059	1.740

TABLE - 4

ANYALYSIS OF CO VARIANCE FOR THE DATA ON BODY MASS INDEX AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS

Source of variance	Sum of Squares	D f	Mean Squares	Obtained 'F' ratio	Table value
Between Subjects	71.098	3	23.699	42.846*	2.77
Within subjects	30.422	55	.553		

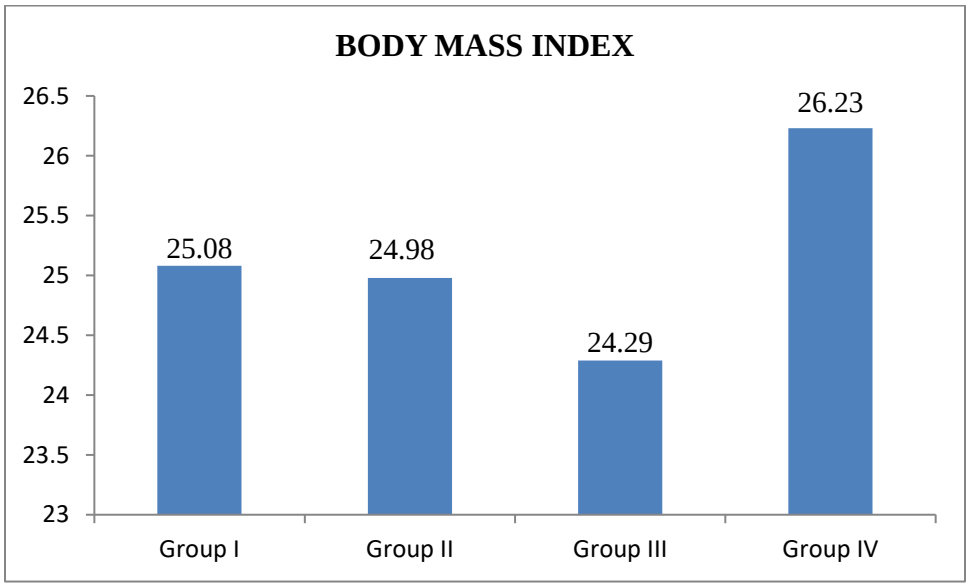
*Significant at 0.05 level

Table value required for significant at 0 .05 levels for d f 3 and 55 is 2.77.

Table 4 shows that the obtained "F" ratio for body mass index was 42.846. It was greater than the required table value of 2.77 at 0.05 level of significant with d f 3 and 55. Result of the study reveals that there was significant difference among college male handball players on heart rate variable.

FIGURE - 2

BAR DIAGRAM SHOWING THE MEANS FOR THE DATA ON BODY MASS INDEX AMONG SPECIFIC SKILL TRAINING WITH PLYOMETRIC TRAINING AND SPECIFIC SKILL TRAINING WITH INTERVAL TRAINING OF COLLEGE MALE HANDBALL PLAYERS



Conclusions

1. The adjusted post test means on heart rate of specific skill training with plyometric training, specific skill training with interval training, combined training and control group were 73.86, 74.66, 73.96 and 74.56 respectively. The 'F' value observed for the adjusted post test means on heart rate was 17.148. It was greater than the table value of 2.77 for degree of freedom 3, 55 at 0.05 level of confidence. Since the observed F- value on adjusted post test means among the groups on speed was highly significant as the value was higher than required table value of 2.77. Thus the results obtained proved that the training on heart rate produced significant improvements among the experimental groups.
2. The adjusted post test means on body mass index of specific skill training with plyometric training, specific skill training with interval training, combined training and control group were 25.08, 24.98, 24.29 and 26.23 respectively. The 'F' value observed for the adjusted post test means on speed was 42.846. It was greater than the table value of 2.77 for degree of freedom 3, 55 at 0.05 level of confidence. Since the observed F- value on adjusted post test means among the groups on speed was highly significant as the value was higher than required table value of 2.77. Thus the results obtained proved that the training on body mass index produced significant improvements among the experimental group.

Recommendations

On the basis of results obtained, the following recommendations were made.

1. The results found in this study may be utilized by fitness trainer and coaches for the training program me to enhance the youth boys and girls programme.
2. The study may be conducted with more number of subjects on the selected dependent variables.
3. Similar study may be conducted on different age and sex category.
4. Similar study can be carried out by using more number of subjects with other variables.
5. A similar study may can be conducted on large population.
6. Studies may be conducted on other variables and also with different training programme.

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