
EFFECTS OF VARIED INTERMITTENT SPRINT TRAINING ON EXPLOSIVE POWER AMONG THE INTERCOLLEGIATE HOCKEY PLAYER

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ABSTRACT

The intention of current study was to find the “effect of varied intermitted sprint training on explosive power among the intercollegiate hockey player.” To achieve this purpose of study, seventy five male hockey players from affiliated colleges of Kurukshetra University located Kurukshetra district, Kurukshetra, were selected as subjects at random. The age of the subjects ranged from 18 to 28 years. The selected subjects were divided into four experimental groups and a control group. Group-1 performed 15mts/40rep with 1:4 exercise rest ratio, Group-2 performed 15mts/40rep with 1:6 exercise rest ratio, Group-3 performed 40mts/15rep with 1:4 exercise rest ratio, Group-4 performed 40mts/15rep with 1:6 exercise rest ratio, and Group-5 acted as control that did not participate in any special training programme. The explosive power was preferred as dependent variable. All the subjects of five groups were tested the selected needy variable at prior and immediately after the programme of twelve weeks. The data was collected for all the groups on explosive power by using vertical jump test; the unit of the measurement was in centimeters. The data were collected from the five group two days before prior to and two days after the training programme on explosive power as pre and post test items. Ancova was used to find out adjustment posttest mean difference of five groups with respect to explosive power and Scheffe’s post hoc test was used to find out pair-wise comparisons between groups. There was a significant difference among the four different intermittent sprint-training group and control group on speed. 40 meters with 15 repetitions, 1:6 exercise rest ratio methods was better improvement on explosive power, than the other groups.

Keywords: 1.Sprint training, 2. Hockey, 3.Power, 4 Vertical jumps 5. Ancova

INTRODUCTION

Top-level sports performance depends on many factors like physical training, individual interest readiness etc. Physical training helps to achieve the required physical fitness to perform an activity. Physical fitness is the capacity of the heart, blood vessels, lungs and muscles to function in optimal efficiency. **SPRINT TRAINING:** The aim of sprinting at full speed is to maintain, for long as possible, this speed. Speed can be developed only by sprints of three to five seconds in duration. This means covering 20 to 40 meters as the ATP reserves do not last any longer in maximum effort. In this study, an attempt is made to find out the effects of varied intermitted sprint training on speed among the intercollegiate hockey players.

METHODOLOGY:

Selection of subjects: The study was planned to find out the effects of varied intermitted sprint training on explosive power among the intercollegiate hockey players. For this purpose, seventy five male hockey players from affiliated colleges of Kurukshetra University located Kurukshetra district, Kurukshetra, were selected as subjects at random. The age of the subjects ranged from 18 to 28 years. **Experimental design:** The selected subjects were divided into four experimental groups and a control group. Group-A performed 15mts/40rep with 1:4 exercise rest ratio, Group-B performed 15mts/40rep with 1:6 exercise rest ratio, Group-C performed 40mts/15rep with 1:4 exercise rest ratio, Group-D performed 40mts/15rep with 1:6 exercise rest ratio, and Group-5 acted as control. This training period was delimited for twelve weeks. The data were collected prior and after twelve weeks of training programme. **Criterion measure:** For measuring power, vertical jump test used and the unit of measurement recorded in centimeters. **Statistical application:** Analysis of covariance (ANCOVA) applied to find out significant adjusted posttest mean difference of groups. Scheffe's post hoc test used to find out paired-wise comparisons between groups.

TABLE - I
ANALYSIS OF CO-VARIANCE OF PRE TEST, POST TEST AND ADJUSTED POST TEST ON
EXPLOSIVE POWER OF DIFFERENT EXPERIMENTAL AND CONTROL GROUP
(scores in seconds)

Pre Test										
Mean	195	195	194	196	195	Between	1989.35	4	497.34	
										1.00
S.D.	0.01	0.01	0.01	0.02	0.01	Within	44781.63	70	496.88	
Post Test										
Mean	214	209	205	201	195	Between	1.24	4	0.31	
										10.33*
S.D.	0.04	0.04	0.03	0.03	0.01	Within	2.10	70	0.03	
Adjusted Post Test										
Mean	2.13	2.08	2.04	2.00	1.94	Between	0.87	4	0.22	
										11.0*
						Within	1.59	69	0.02	

* Significant at 0.5 level of confidence. (The table values required for significance at 0.5 level of confidence for 4 and 70 and 4 and 69 are 2.50 and 2.502 respectively.

RESULTS :

The table I shows that the pre-test mean values on power of Group A, Group B, Group C, Group D and Group E are 195, 195, 194, 196 and 195 respectively. The obtained 'F' ratio of 1.00 for pre-test scores is lesser than the table value on power of Group A, Group B, Group C, Group D and Group E are 214, 209, 205, 201 and 195 respectively.

The obtained "F" ratio of 10.33 for post-test scores is higher than the table value of 2.50 for df 4 and 70 required for significance at .05 level of confidence on power. That the adjusted post- test means on power of Group A, Group B, Group C, Group D and Group E are 2.13, 2.08, 2.04, 2.00

and 1.94 respectively. The obtained "F" ration of 11.0 for adjusted post-test means is higher than the table value of 2.502 for df and 69 required for significance at .05 level of confidence on power. The results of the study indicated that there was a significant difference between the adjusted post-test means of Group A, Group B, Group C, Group D, and Group E on power.

TABLE I-A
SCHEFFE'S POST-HOC TEST FOR THE DIFFERENCES BETWEEN PAIRED
MEANS ON POWER
(Scores in Seconds)

Group	Group	Group	Group	Group	Mean	
Confidence						
A	B	C	D	E	Differences	Interval Value
2.13	2.08	-----	-----	-----	0.05	0.163
2.13	-----	2.04	-----	-----	0.09	0.163
2.13	-----	-----	2.00	-----	0.13	0.163
2.13	-----	-----	-----	1.94	0.32*	0.163
-----	2.08	2.04	-----	-----	0.04	0.163
-----	2.08	-----	2.00	-----	0.08	0.163
-----	2.08	-----	-----	1.94	0.27*	0.163
-----	-----	2.04	2.00	-----	0.04	0.163
-----	-----	2.04	-----	1.94	0.23*	0.163
-----	-----	-----	2.00	1.94	0.19*	0.163

* Significant at 0.5 Level of confidence.

Group A: 15MTS X40 Rep with 1:4 rest ratio: Group – 15MTS X40Repwith 1:6 rest ratio,
Group C: 40MTS X15 Rep with 1:4 Rests ratio:, Group D: 40MTS X15 Rep with 1:6 rest ratio

The table I (A) shown that the mean difference values between AE, BE, CE, AND DE, were 0.32, 0.27, 0.23, 0.19 respectively on power, which were greater than the required were significant. And also the table shows that the mean difference value between A and B, A and C, A and D, B and C, B and D, C and D were 0.05, 0.09, 0.13 and 0.04 and 0.08 and 0.04 respectively on power which were lesser than the required confidence interval value 0.03 at .05 level of confidence. Hence, the above four were not significant.

FINDING:

There was a significant difference among the four intermittent sprint trainings and control group on speed. Significant improvement noticed on power, due to varied intermittent sprint training among intercollegiate hockey players.

CONCLUSION:

The result of the study showed that the 15 meters /40 repetition with 1:4 rest ratio is better than other intermitted sprint training for improving power qualities among the hockey player, 15 meters*40 repetition with 1:6 rest ratio is the next best.

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