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Effect of conditioning on physical fitness of Players hockey

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Abstract

Introduction: The purpose of study was to determine the effect of conditioning of different durations on selected physical fitness components of hockey players.

Methodology: 20 male hockey players who participated in intra college tournament and were short listed for inter university coaching camp were selected for this study. The tests items applied in the study were Standing Broad Jump (leg power), T-Test(agility) and Zipper Test(Shoulder Flexibility). The tests were administered consecutively for 4 weeks. On first week test was conducted without conditioning, on 2nd week after 5minutes conditioning, on 3rd week after 10 minutes conditioningand on 4th week15 minutes conditioning respectively.

Result: The data obtained were examined by one way analysis of variance (anova) and it was found that there was a significant difference in different durations of test administrations. In the Legs power test the subjects have shown better performance after 15 minutes conditioning followed by 10 minutes conditioning, after 5 minutes conditioning, and least performance was shown by the subjects when they performed after no conditioning. Similarly in case of shoulder flexibility test the subjects have shown their better performance after 15 minutes conditioning, followed by 10 minutes conditioning, 5 minutes conditioning and shown least performance without conditioning. In case of Agility test the subjects have Shown their better performance after 15 min. conditioning followed by 10 minconditioning, 5 minutes conditioning and shown least performance without conditioning.

Conclusion: It was found that the performance increased continuously after each test administered.

Keywords: Conditioning, physical, fitness, hockey, administered

Introduction

The term conditioning training refers to the format of exercise which highlights building the strength, size as well as endurance of skeletal muscles. To undertake conditioning training, you need to utilize resistance to muscular contraction so as athlete can achieve the desired results. There are several different ways of doing these particular exercises, the most well Known of which is using elastic or hydraulic forces to counter opposing muscular contractions. If a athlete are looking to enhance his performance in a sport or activity, or want to get the benefits of physical activity, body conditioning exercises strengthen as well as improve his body and performance. Body conditioning usually includes aerobic exercise, strength training and stretching as well as flexibility exercises.

A major discussion concerns the use of various types of Body conditioning in Physical education and sports is defined as a period of preparatory exercise to raise the body temperature or training performance. The general purpose of a pre exercise conditioning is to increase muscle and tendon suppleness, to stimulate blood flow to the periphery, to increase muscle temperature, and to enhance free, coordinated movement. Given the amount of focus and importance that professional athletes place on conditioning, there is a surprisingly procedure before engaging in physical activity i.e the physical educator and coach must be familiar with the available evidence before determining whether or not to use the conditioning or how to use it most effectively. Conditioning procedures are usually based on the trial and error experience of the athlete or coach, rather than on scientific study. Although the practice of some of the recommended conditioning components is widely undertaken, the value of conditioning has become a worthy research issue as it is not known whether conditioning is of benefit, of potential harm, or having no effect on an individual's performance.

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Perhaps more importantly, comparisons of different types and structures of conditioning are being made in controlled studies to determine the effects, if any, of conditioning.

Methodology

For this study 20 male hockey players who participated in intra college tournament and were short listed for inter university coaching camp were selected, with their routine work out some conditioning exercise like light jogging, stretching and breathing were also given for 5, 10 and 15 minutes. To collect the data for the study, the following tests were administered continuously for four weeks on the 1st week no condition exercise were give five minutes conditioning on second week, after 10 minutes conditioning on 3rd week and after 15 minutes conditioning on the fourth week.

Standing broad jump:-Was applied to measure the explosive strength of legs.

Zipper test:-Was applied to measure the Shoulder flexibility.

T- Test:-Was applied To measure the agility.

Procedure of conditioning

On the very 1st week, no conditioning exercises were given

and test was conducted without any conditioning exercise.

On the second week, Tests were followed by giving 5 minutes conditioning including alternative slow and fast running for 2.5 minutes and different rotational, stretching and jumping exercises for another 2.5 minutes.

On the 3rd week, Tests were followed by giving 10 minutes conditioning exercises which included alternate slow and fast running for 5 minutes and different rotation and strengthing exercises for another 5 minutes.

On the 4th week, Test were followed by giving 15 minutes conditioning exercises which included alternate slow and fast running for 7.5 minutes and different rotational, stretching, Jumping and hopping exercises for another 7.5 minutes

Analysis of Data

The analysis of data was done by one-way analysis of variance (ANOVA) in order to determine the differences if any. When the difference was found significant, the scheff's post-hoc test was applied to access the significant difference among the group means. The level of significances to check the differential effect of different duration of conditioning on selected physical fitness components obtained by F-ratio was set at 0.05.

Table 1: Description analysis of Legs power (Standing Broad Jump)

	N	Mean	Std. Deviation	Std. error
Without conditioning	20	29.85	5.60	1.25
With 5 conditioning	20	37.65	7.58	1.69
With 10 conditioning	20	41.35	8.03	1.79
With 15 minutes conditioning	20	45.27	9.81	2.19

Table 2: One way analysis of Leg Power (ANOVA)

	Sum of squares	df	Mean Squares	F-Value
Between Groups	2591.28	3	863.76	13.06
Within groups	4733.38	76	62.28	-

F. 05 (3,76) =2.72

From the results presented in table it has been observed that there were significant differences among 4 groups in performances as the F-Value of 13.06 was found to be significant at 0.05 level of confidence because it was greater

than value of 2.7 required to be significant. As it was found significant, scheff's post -hoc test was applied to find out the mean differences.

Table 3: Show the minutes conditioning

No	5 minutes Conditioning	10 minutes Conditioning	15 minutes Conditioning	M.D	C.D
29.85	37.65	-	-	7.8*	6.49
29.85	-	41.35	-	11.5*	6.49
29.85	-	-	45.27	15.42*	6.49
-	37.65	41.35	-	3.700	6.49
-	37.65	-	45.27	7.62*	6.49
-	-	41.35	45.27	3.920	6.49

It is learnt from above table that there were significant difference in between no Conditioning Vs 5 minutes Conditioning, no Conditioning Vs 10 minutes Conditioning, no Conditioning Vs 15 Conditioning and 5 minutes Conditioning Vs 15 minutes Conditioning, as the obtained mean differences value of 7.8, 11.5, 15.42 and 7.62 were greater than critical differences value of 6.49. it was also observed that there were no significant mean differences in between 5 minutes Conditioning Vs 10 minutes Conditioning and 10 minutes Conditioning Vs 15 minutes Conditioning because obtain mean difference value are 3.70 and 3.92 respectively, were less than critical value of 6.49.

Table 4: Description analysis of Shoulder Flexibility (Zipper Test)

	N	Mean	Std. Deviation	Std. error
Without Conditioning	20	21.85	6.50	1.45
With 5 minutes Conditioning	20	27.40	6.01	1.34
With 10 min. Conditioning	20	30.45	6.98	1.60
With 15 min. Conditioning	20	31.80	6.20	1.39

Table 5: One way analysis (ANOVA)of Shoulder Flexibility

	Sum of squares	Df	Mean Squares	F-Value
Between Groups	831.25	3	277.42	6.9
Within groups	3145.50	76	41.39	-

F. 05 (3,76) =2.72

From the results presented in table it has been observed that there were significant differences among 4 groups in performances as the F-Value of 6.900 was found to be significant at 0.05 level of confidence because it was greater

than value of 2.7 required to be significant. As it was found significant, scheef's post-hoc test was applied to find out the mean differences, which is as follows.

Table 6: Show the no of conditioning

No Conditioning	5 min. Conditioning	10 min. Conditioning	15 min. Conditioning	M.D	C.D
21.85	27.400	-	-	5.550*	5.250
21.85	-	29.450	-	6.600*	5.250
21.85	-	-	30.800	7.950*	5.250
-	27.400	29.450	-	2.050	5.250
-	27.400	-	30.800	3.400	5.250
-	-	29.450	30.800	1.350	5.250

It is learnt from above table that there were significant difference in between no Conditioning Vs 5 minutes Conditioning, now Conditioning Vs 10 minutes Conditioning, no Conditioning Vs 15 minutes Conditioning and 5 minutes Conditioning Vs 15 minutes Conditioning, as the obtained mean differences value of 5.550, 6.600, and 7.950 were greater than critical differences value of 5.250. it was also observed that there were no significant mean differences in between 5 minutes Conditioning Vs 10 minutes Conditioning, 5 minutes Conditioning Vs 15 minutes Conditioning, 10 minutes Conditioning Vs 15 minutes Conditioning because obtained mean difference value are 2.050, 3.400 and 1.350 respectively, were less than critical value of 5.250. The different mean values are depicted in fig. below.

Table 7: Description analysis of Agility (T-Test)

	N	Mean	Std. Deviation	Std. error
Without Conditioning	20	13.30	0.95	.21
With 5 min. Conditioning	20	11.88	1.02	.23
With 10 min. Conditioning	20	11.64	0.84	.19
With 15 min. Conditioning	20	11.31	0.75	.17

Table 8: One way analysis(ANOVA)of Agility

	Sum of squares	df	Mean Squares	F-Value
Between Groups	47.70	3	15.90	18.35
Within groups	71.15	76	.86	-

F. 05 (3,76) =2.72

From the results presented in table it has been observed that there were significant differences among 4 groups in performances as the F-Value of 18.35 was found to be significant at 0.05 level of confidence because it was greater than value of 2.7 required to be significant. As it was found significant, scheef's post-hoc test was applied to find out the mean differences, which is as follows.

Table 9: Show the no of conditioning md and cd

No Conditioning	5 min. Conditioning	10 min. Conditioning	15 min. Conditioning	M.D	C.D
13.296	11.380	-	-	0.816*	0.738
13.296	-	11.639	-	1.757*	0.738
13.296	-	-	11.309	1.887*	0.738
-	11.380	11.639	-	0.741*	0.738
-	11.380	-	11.309	1.071*	0.738
-	-	11.639	11.309	0.33	0.738

It is learnt from above table that there were significant difference in between no Conditioning Vs 5 minutes Conditioning, no Conditioning Vs 10 minutes Conditioning, no Conditioning Vs 15 minutes Conditioning and 5 min. Conditioning Vs 10 minutes Conditioning, and 5 minutes

Conditioning Vs 15 minutes Conditioning, as the obtained mean differences value of 0.816,1.757,1.887,0.741 and 1.071 were greater than critical differences value of 0.738. it was also observed that there were no significant mean differences in between 10 minutes Conditioning Vs 15 minutes Conditioning, because obtained mean difference value are 0.33, was less than

Conclusion

In the legs power test the subjects have shown better performance after 15 minutes Conditioning followed by 10 minutes Conditioning, 5 minutes conditioning and no Conditioning. Similarly in case of shoulder flexibility test, the subjects have shown there better performance after 15 minutes conditioning followed by 10 minutes Conditioning, 5 minutes conditioning and no Conditioning. In case of agility test subjects have shown their better performance after 15 minutes conditioning, followed by 10 minutes Conditioning, 5 minutes Conditioning and without Conditioning.

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