

Effect of Harness Training With Swiss Ball Core Exercises Program on Throwing Accuracy among Men Basketball Players

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Abstract – The present study was undertaken to analyze the effect of harness training with core exercises program on throwing accuracy among men basketball players. The investigator has selected N=48 men inter collegiate level/state level participated basketball players at random from various college of Nellore district of Andhra Pradesh. Their age ranged from 18-25 years. The basketball players chosen for the study were divided into four equal groups n=12 and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. Harness training were given to group 'A' Swiss ball core exercises training were given to group 'B', Combined training of harness training and Swiss ball core exercises training were given to group 'C' and the 'CG' control group 'D' were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting throwing accuracy test [Johnson basketball test]. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that Harness training, Swiss ball core exercises training and combined training significantly improved basketball throwing accuracy performance of the basketball players when comparative with control group. The Combined training group basketball players shown better performance in basketball throwing accuracy performance test when comparison with harness training group and Swiss ball core exercises training group basketball players.

Keywords: – Harness Training, Swiss Ball, Core Exercises, Muscular Endurance.

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INTRODUCTION

Contrast sled/tire pulls runs purpose enhance stride length of start and turn over at top speed, increase starting speed and transition to top speed. Procedures attach a weighted sled or tire to yourself, which you will drag during the run. Emphasize proper speed mechanics. After a buildup and 10-20 yards (9-18 meters) of near maximum running, release the Velcro belt to allow for unresisted running. You should feel an over speed sensation over 10-20 yards (9-18 meters) (Lee and Vance 2005).

An exercise performing on Swiss ball is known as Swiss ball exercises. In this study exercises are mainly targeted to core muscles to develop by using Swiss ball surface. The term core muscles refer to abdominal and lower back muscles of the body. These core muscles protect the lumbar spine to maintain core stability. The major core muscles of the body transverses abdominis, multifidus, external and internal obliques, erector spinae, rectus

abdominis, diaphragm and longissimus thoracis. Core strength help to improve sports performance of the players, core exercises help to physical activities to reach the fitness goal, improve stability, prevents injuries, low back pain and poor posture (Aditya 2017).

STATEMENT OF THE PROBLEM:

The purpose of the study was to investigate the "Effect harness training with core exercises program on throwing accuracy among men basketball players.

OBJECTIVES OF THIS STUDY

1. To measure the influence of harness training treatment on basketball throwing accuracy of Basketball players.

2. To evaluate the impact of Swiss ball core exercises training treatment on basketball throwing accuracy of Basketball players.
3. The examined the effect of combined training treatment on basketball throwing accuracy of Basketball players.
4. To understand the changes between harness training, Swiss ball core exercises and combined training on basketball throwing accuracy of Basketball players.

HYPOTHESIS:

- It was hypothesis that there will be a significant improvement in basketball throwing accuracy after the twelve weeks of training in harness training group basketball player, Swiss ball core exercise program group basketball players and combined training training group [harness training and Swiss ball core exercises] group basketball players when compared with control group basketball players.
- It was hypothesis that combined training group basketball players will be superior to the harness training group and Swiss ball core exercise program group basketball player on basketball throwing accuracy.

METHODOLOGY:

The purpose of this study was to find out the effect of harness training with core exercises program on muscular endurance among men basketball players. To achieve the purpose of this study investigator has selected N=48 men inter collegiate level and state level participate basketball players at random from various college of Nellore district of Andhra Pradesh .Their age ranged from 18-25 years. The subjects chosen for study was divided into four groups each groups consisted of twelve basketball players and designated as experimental group 'A' experimental group 'B' experimental group 'C' and control group 'D'. Harness training were given to group 'A' [HTG] Swiss ball core exercises training were given to group 'B' [SBCEPG], Combined training of harness training and Swiss ball core exercises training were given to group 'C' [CHTSBCEPG] and the 'CONG' control group 'D' was restricted to participate in any of the training programme other than their regular activities.

Training was given three days in a week for twelve weeks to HTG, SBCEPG and CHTSBCEPG basketball players. The subject were tested on basketball throwing accuracy at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the basketball throwing accuracy Johnson basketball test were used respectively

because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on Johnson basketball test data have been examine by ANCOVA in order to determine the differences if any among the group at pre and posttest.

Table – I

Analysis of Covariance of HTG, SBCEPG, CHTSBCEPG and CONG Basketball players for Basketball throw for accuracy [In number]

Tests	HTG	SBCEP	CHTSBCEPG	CONG	Source of variance	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test									
Mean	16.33	16.91	17.33		B	10.75	3	3.58	2.09
SD	1.30	1.24	1.23	17.58	W	35.16	44	1.70	
Post Test									
Mean	20.58	20.57	22.75		B	224.33	3	74.77	42.00*
SD	1.50	1.44	0.86	16.75	W	78.33	44	1.78	
Adjusted Post Test									
Mean	21.05	20.66	22.55	16.39	B	245.17	3	81.72	77.96*
					W	45.07	43	1.04	

*Significant at 0.05 level of confidence
(Required table value at 0.05 level for df (3 & 56) is 2.77 and df (3 & 55) is 2.77)

The above table-I shows that there is a significant difference on basketball throwing accuracy among the four groups such as harness training group (HTG), Swiss ball core exercises program group (SBCEPG), Combined training of harness training and Swiss ball core exercises training [CHTSBCEPG] and control group (CONG). Since the calculated 'F' value required being significant at 0.05 level for d/f 3, 56 and 3, 55 are 2.77 and 2.77, but the calculated values of basketball throwing accuracy post and adjusted posttest 'F' values are 42.00 and 77.96 respectively. Which are higher than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II

Scheffes Post hoc test for mean difference between HTG, SBCEPG, CHTSBCEPG and CONG basketball players on basketball throw for accuracy [In numbers]

Mean Value				Mean Difference	C.I
HTG	SBCEPG	CHTSBCEPG	CONG		
21.05	20.66	-	-	0.39	1.20
21.05	-	22.55	-	1.50*	
21.05	-	-	16.39	4.66*	
-	20.66	22.55	-	1.89*	
-	20.66	-	16.39	4.27*	
-	-	22.55	16.39	6.16*	

*Significant at 0.05 level of confidence

The mean difference HTG basketball players and CHTSBCEPG basketball players, HTG basketball players and CONG basketball players, SBCEPG basketball players and CHTSBCEPG basketball players, SBCEPG basketball players and CONG basketball players and CHTSBCEPG and CONG basketball players were 1.50, 4.66, 1.89, 4.27 and 6.16 which are higher than the CI value 1.20. Therefore study approved that there is significant

differences exist between above groups on basketball throw for accuracy.

The mean difference between HTG basketball players and SBCEPG basketball players is 0.39 which is lesser than the CI value 1.20. Hence the study confirmed that there is no significant differences exist between groups on basketball throw for accuracy.

The prior test mean value, post test mean values and adjusted post test mean values of HTG, SBCEPG, CHTSBCEPG and CONG basketball players of basketball throw for accuracy displayed in line graph.

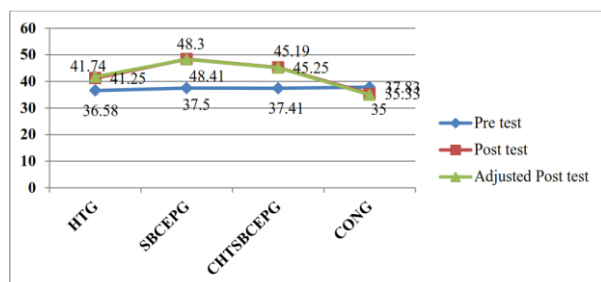


Figure –I display the line graph of pre test, post test and adjusted post test mean values for muscular endurance of HTG, SBCEPG, CHTSBCEPG and CONG basketball players.

DISCUSSION ON HYPOTHESIS:

- In the first hypothesis it was stated that there will be a significant improvement in muscular endurance after the twelve weeks of training in harness training group basketball player, Swiss ball core exercise program group basketball players and combined training group [harness training and Swiss ball core exercises] group basketball players when compared with control group basketball players. The result of the study found that experimental groups basketball players muscular endurance performance level improved when compared with control group. Hence the research hypothesis is accepted.
- In second hypothesis mention that combined training group basketball players will be superior to the harness training group and Swiss ball core exercise program group basketball player. The study found that Swiss ball core exercises program group basketball players given best performance when comparison with HTG and CHYSBCEPG training group basketball players. Hence research hypothesis rejected and null hypothesis accepted.

DISCUSSION AND FINDINGS:

The study found that basketball throw for accuracy significantly improved through specific training among three experimental groups namely harness training to [HTG], Swiss ball core exercises program to [SBCEPG] and combined training harness training and Swiss ball core exercises program to [CHTSBCEPG]. The literatures connected to basketball skill related performance Joji and Shelvam (2015) proved that resistance exercises program is effective to improve shooting ability and passing ability of basketball players. Keerthi and Sundar Raj (2018) study result reveal that shooting ability, dribbling ability and passing ability of the basketball players improved through plyometric exercises. Seyfi et al., (2018) concluded that jump shot, jump shot against defense and standing free throw positively improved through explosive strength exercises. Inder and Ratnesh (2017) found that SAQ training exercises effective to improve the playing ability of basketball players.

CONCLUSIONS:

This research concluded that harness training group [HTG] basket ball players, Swiss ball core exercises program group [SBCEPG] basketball players and combined harness and Swiss ball core exercises program group [CHTSBCEPG] basket ball players throws the basketball more accuracy to the target comparative to control group [CONG] basket ball players. Further it was concluded that combined harness and Swiss ball core exercises program group [CHTSBCEPG] basket ball players' throws basketball to the target more accurately comparatively to harness training group [HTG] basket ball players and Swiss ball core exercises program group [SBCEPG] basketball players. There were no differences found between harness training group [HTG] basket ball players and Swiss ball core exercises program group [SBCEPG] basketball players mean in throwing basketball accurately to the target area.

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