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Effect of Harness Training With Swiss Ball Core Exercises Program on Muscular Endurance 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 muscular endurance 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 bent knee sit up 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 muscular endurance performance of the basketball players when comparative with control group. The Swiss ball core exercises training group basketball players shown better performance in bent knee sit up performance number when comparison with harness training group and Combined training group basketball players.

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

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INTRODUCTION

Physical exercises not only add years to life, but life to years. It means physical activities give life to the person till one survives and it helps one to live healthy without any diseases or aliments (Gupta 2007).

Harness the horse. (a set of straps placed on animal so that it can pull heavy things). A restraint or support, especially one consisting of a loop or network of rope or straps. A collection of wire or cables bundled and routed according to their function.

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. Swiss ball is an unstable surface. The greater benefit of performing exercises on unstable surfaces is recruiting more core muscles and increases the activation of rectus abdominis muscles (Aditya 2017).

Muscular endurance is the ability of the basketball players to persist in physical activity or to tolerate muscular fatigue is term as muscular endurance. Muscular endurance abilities involving moving or maintaining one's own body weight to exhaustion. Muscular endurance abilities are of three type muscular endurance of the abdominal muscles, muscular endurance of the arms and shoulder and cardio vascular endurance (Gore 2010).

STATEMENT OF THE PROBLEM:

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

OBJECTIVES OF THIS STUDY

1. To measure the influence of harness training treatment on the muscular endurance of Basketball players.

2. To evaluate the impact of Swiss ball core exercises training treatment on the muscular endurance of Basketball players.

3. The examined the effect of combined training treatment on the muscular endurance of Basketball players.

4. To understand the changes between harness training, Swiss ball core exercises and combined training on the muscular endurance of Basketball players.

HYPOTHESIS:

- It was hypothesis 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 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.

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 CTHTSBCEPG basketball players. The subject were tested on muscular endurance at the beginning (Pre-test) and at the end of the experimental period (Post-test). To measure the muscular endurance bent knee sit-ups test were used respectively because of their simplicity and availability of necessary facilities, instrument and equipment's. The analysis of data on sit-ups 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 muscular endurance [In numbers]

Tests	HTG	SBCEPG	CHTSBCEPG	CONG	SV	Sum of Squares	df	Mean Squares	'F' Ratio
Pre Test									
Mean	36.58	37.50	37.41	37.83	B	10.16	3	3.38	0.45
SD	3.31	2.81	2.31	2.36	W	328.50	44	7.46	
Post Test									
Mean	41.25	48.41	45.25	35.33	B	1145.22	3	381.91	67.73*
SD	3.19	1.08	1.65	2.90	W	248.08	44	5.63	
Adjusted Post Test Mean	41.74	48.30	45.19	35.00	B	1171.04	3	390.34	158.59*
					W	105.83	43	2.46	

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 muscular endurance 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 muscular endurance post and adjusted posttest 'F' values are 67.73 and 158.59 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 muscular endurance [In numbers]

Mean Value				Mean Difference	C.I
HTG	SBCEPG	CHTSBCEPG	CONG		
41.74	48.30	-	-	6.56*	1.87
41.74	-	45.19	-	3.45*	
41.74	-	-	35.00	6.74*	
-	48.30	45.19	-	3.11*	
-	48.30	-	35.00	13.3*	
-	-	45.19	35.00	10.19*	

Significant at 0.05 level of confidence

The mean difference HTG basketball players and SBCEPG basketball players, 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 6.56, 3.45, 6.74, 3.11, 13.30 and 10.19 which are higher than the CI value 1.87. Therefore study approved that there is significant differences exist between above groups on muscular endurance.

The prior test mean value, post test mean values and adjusted post test mean values of HTG, SBCEPG, CHTSBCEPG and CONG basketball players of muscular endurance displayed in line graph

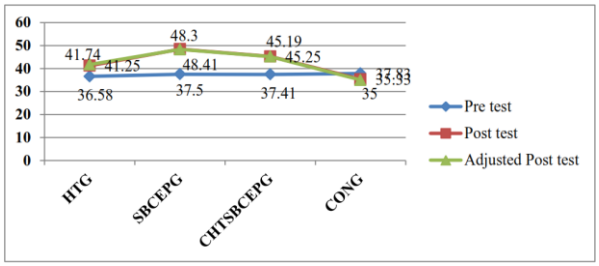

Figure –I display the line graph of pre test, post test and adjusted post test mean values for muscular endurance of HTG, SBCEPG, CHTSBCEPG and CONG basketball players.

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 bent knees sit up performance (muscular endurance) of the basketball players' increase through harness training [HTG], Swiss ball core exercises program [SBCEPG] and combined training harness training and Swiss ball core exercises program [CHTSBCEPG]. The following supportive studies regarding muscular endurance Stanton et al., (2004) declared that Swiss ball exercises positively increased the core stability. Rajeev Srivastava (2016) research study reported that isolated and combined training of pilates exercises and calisthenics exercises significantly increased the number of sit-ups performance. Kavita (2014) project study resulted that resistance training has significant effect to positively increase abdominal strength of basketball players. Velusamy (2013) found that resistance exercises with circuit training program were more effective to increase the muscular endurance of cricket players. Meera and Mohankrishna (2017) proved that core exercises and yoga asana practices were better to improve muscular endurance performance of athletes.

CONCLUSIONS:

This study results 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 sit up [muscular endurance] performance number enhance comparative to control group [CONG] basket ball players. Further this study found that Swiss ball core exercises program group [SBCEPG] basketball players were excellent in sit up [Muscular endurance] performance number comparative to harness training group [HTG] basket ball players and combined harness and Swiss ball core exercises program group [CHTSBCEPG] basket ball players. Combined harness and Swiss ball core exercises program group [CHTSBCEPG] basket ball players were excellent than harness training group [HTG] basket ball players in sit up performance number.

REFERENCES

Rajeev Srivastava (2016). Effect of pilates, calisthenics and combined exercises on selected physical motor fitness, Isara Publication, New Delhi.

Kavita Sharma (2014). Effect of nine weeks resistance training program on selected physical fitness variables of Basketball players, International Journal of Scientific and Research Publications, 4(12).

Velusamy, P. (2013). Effect of Varied Methods of Resistance Training on Selected Physical Fitness Components of Inter Collegiate Male Volley Ball Players, International Journal of Science and Research (IJSR), 2(7).

Meera R. and Mohankrishna. R. (2017). Effect of Core Strength Training and Yogasana

Practices on Selected Health Related Physical Fitness Components among Female Athletes, International Journal of Advance Research, Ideas and Innovations in Technology, 3(6).

Stanton, Robert; Reaburn, Peter, R., Humphries, Brendan (2004) **The Effect of Short-Term Swiss Ball Training on Core Stability and Running Economy,** Journal of Strength and Conditioning Research, 18(3), pp. 522-528.

Gupta R. (2007) Guide to Physical Education, Ramesh Publishing house, New Delhi.

Gore C.S. (2010) Evaluation in Physical education and sports, Sports publication, New Delhi.

Aditya Kumar Das (2017) Core Exercises, Laxmi Book Publication.

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