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EFFECT OF PLYOMETRIC TRAINING ANDPLYOMETRIC COMBINED WITH WEIGHT TRAINING ON SELECTED SKILL PERFORMANCE VARIABLES OF KABADDI PLAYERS

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ABSTRACT

To achieve the purpose of the study, forty-five men native Kabaddi players were selected as subjects. The age, height, and weight of the subjects ranged from 16 to 18 years, 1.63 to 1.76meters and50 to 65 kilograms respectively. The subjects selected were randomly assigned into three equal groups of Fifteen subjects each. Group I (P.T) underwent plyometric training, group II (CPW) underwent plyometric training combined with weight training and group III (CG) acted as a control. The independent variable in the present study was Plyometric training (PT), Plyometric training Combined with Weight Training (CPW). The dependent variable in the present study was Moving Toe touch performance. Based on the pilot study the training schedule for plyometric training and combined plyometric training with weight training with 1rm respectively. The experimental groups underwent their respective training program 3 days for a week for twelve weeks in addition to their regular lifestyle activities. Group–II involved on plyometric training (P.T), Intensity starting from low to high at 60-foot contact to at 110-foot contact with 10 to 14 repetitions and 2 to 3 sets followed from the first week to twelve weeks. the data collected from the three groups prior to and post experimentation on selected dependent variables were statistically analyzed to find out the significant difference if any, by applying analysis of covariance (ANCOVA). Since three groups were involved, whenever the obtained 'F' ratio for adjusted post-test means was found to be significant, the Scheffe's test was applied as a post hoc test to determine the paired mean differences. In all the cases level of confidence was fixed at 0.05 for significance. The plyometric training combined with weight training was good enough to develop the Moving Toe touch skill performance.

Keywords: Plyometric training, weight training, Kabaddi Players, Toe touch performance.

1. INTRODUCTION

It should be understood on a broad intelligence that physical exercises square measure doubtless to principle suggests that to boost performance. However the sports performance is enhanced by alternative suggests that additionally, that ought to be enclosed within the idea of sports coaching. Such means, that square measure most ordinarily used together within the workup, square measure academic directions, consultation, tasks of interpretation, therapy live for revitalization from fatigue, sufferer regulatory measure and then on. These suggest that and also the workup, actual coaching method is employed during an advanced incorporated manner. In reality, we have a tendency to cannot separate work up from alternative suggestions that. Thus the idea of sports coaching should embody all suggestions that for the advance of the performance. Sports coaching, therefore, is that the total method of preparation of a sport, through completely different suggests that and forms for higher performance.

Plyometrics is a method of developing explosive power, an important component of the athletic performances. From a practical point of view, plyometric training is relatively easy to teach and learn, and it places fewer physical demands on the body than strength or endurance. From a physiological perspective. Practical experience supports its value, yet we do not fully understand how it works. Although some of the basic neuromuscular processes underlying plyometrics are known, little research has been done on what actually occurs at this level and very few types of research are done on combine plyometric training with weight training so to bring out the positive and negative effects of these training. By considering the above literature, an attempt has been made to find out the effect of plyometric training and combined plyometric training with weight training on the selected skill performance of Kabaddi players. Throughout sports science literature, combination coaching has generally brought up the mix of resistance and plyometric coaching.

Studies have consistently found that while both resistance and plyometric training alone may potentially increase power output in the form of the vertical jump, the combination of the two yields the most beneficial results **(Adams et al., 1992; Ebben & Watts, 1998; Fatouros et al., 2000; Kotzamanidis et al., 2005).** A study by **Tricoli et al., (2005)** found that combination training improved subjects' countermovement performed more than those who performed just plyometrics (6.6% to 5.7%, respectively). Moreover, only the combination group improved in the squat jump (9.5%). Another study found that those who performed combination training improved their countermovement , squat jump, and 30-meter dash times significantly better than groups that trained for strength alone **(Kotzamanidis et al., 2005).** As plyometrics are considered the bridge to explosive movements, its combination with resistance training enhances power production **(Tricoli et al., 2005).**

Researchers agree that enhancements ar thanks to improved neuromuscular variations and coordination **(Cronin, et al., 2002; Bobbert et al., 1996). Fleck & Kraemer, (2004)** studies have really performed the exercises on an identical day with many hours between plyometrics and fourteen resistance (**Fatouros et al., 2000).** this can be sometimes thought of advantageous but because it makes it troublesome to make sure adequate recovery and energy restoration of the muscle **(Baechle & Earle, 2000)** Another design of combined training involves combining upper body resistance with lower-body plyometrics and vice versa **(Baechle & Earle, 2000)**. With this program, upper and lower body regions take turns alternating between high and low intensities.

Nurper (2015) Sprint, countermovement jump, standing broad jump, peak power, and kicking speed test values were all significantly improved in the Plyometric Training Group, as compared with the Control Group. The results indicated that safe and effective Plyometric

Training can be useful to strength and conditioning for explosive strength. **Saeed (2015)** assessed the effects of short-term plyometric training programs on sprint, strength, and power and agility performance in non-athletic men. The result of the study shows that plyometric training has been effective on the physical preparation indices and can improve the nonathletes performance. **Ramesh and Others (2015)** compared the effects of 6 weeks of vertical, horizontal, or combined vertical and horizontal plyometric training on muscle explosive, endurance, and balance performance. The study is incontestable that vertical, horizontal, and combined vertical and horizontal jumps evoked purposeful improvement in explosive actions, balance, and intermittent endurance capability. However, combining vertical and horizontal drills appears a lot of advantageous to induce larger performance enhancements. **Senthil (2015)** find out the effects of 12 weeks of a plyometric training program on selected physical and physiological variables among high school boys. The results of the study showed that there was a major distinction between the plyometric training cluster and therefore the management cluster. And also, the plyometric training cluster showed vital improvement in Power, Abdomen muscle strength, Cardio-respiratory endurance, and Resting pulse compared to the control cluster. **Jaswant and Others (2016)** The purpose of the study was to find out the comparative effect of Plyometric and weight training on vertical jumping ability. On the basis of the findings of the study, it may be considered that Plyometric training could be a very much useful method of training for sportsmen to improve vertical jumping ability and to retain the same for a longer duration. **Sharma and Banne (2015).** revealed that the twelve weeks systematic training programme consisting of plyometric exercises had contribute effect on anaerobic capacity of football players. But the plyometric exercises did not have any significant effect for improving the aerobic capacity of football players

Skill Performance Variable

Kabaddi, our terribly own autochthonic sport. the sweetness of this sport lies within the indisputable fact that players need a particular set of skills to perform proficiently, whether or not compete on a mat or mud. Associate in Nursing agile body, sharp mind, fearless perspective, and a spotlight to tiny details build one a foremost kabaddi player. Fitness is another crucial side that helps the players to beat powerful spells in kabaddi. however fitness alone does not outline success in kabaddi, players should possess special skills to face out from the heap.

Toe Touch: Toe bit in kabaddi is one amongst the foremost common kabaddi skills within the raider's arsenal during which the raider tries to the touch the defender victimization his toe and grab a degree. The success of this move depends majorly on the speed and unpredictability of the raider to perform it before the defender anticipates the move.

2. METHODOLOGY

2.1 Selections of subjects

Forty-five men, native kabaddi players were selected as subjects. The age, height, and weight of the subjects ranged from 18 to 21 years, 1.63 to 1.76 meters and50 to 65 kilograms respectively. The subjects were divided into three equal groups of 15 subjects in each. Group I (P.T) underwent plyometric training, group II (CPW) underwent plyometric training combined with weight training and group III (CG) acted as a control.

2.2 Selection of variable

In the present study, the investigator selected the skill-based performance variable namely moving toe touch. The selected criterion variable was measured in Seconds.

2.3 Statistical technique

The collected data were statistically analyzed for the significant difference if any, by applying Analysis of Covariance (ANCOVA) among the groups. Since, three groups were compared, whenever, the obtained 'F' ratio for adjusted post-test was found to be significant, the Scheffe's test was applied to find out the significant paired mean differences, if any. The level of significance was set at a 0.05 level of confidence, which was considered as an appropriate.

3. RESULTS AND DISCUSSION

The influence of plyometric training and plyometric training combined with a weight training program on moving toe touch was analyzed and the results are presented below.

Analysis of Moving Toe touch performance on Training Effect

The mean and standard deviation values on Moving Toe touch performance of control group, Plyometric training group, and Combined Plyometric weight training group during twelve weeks of training and testing periods have been presented in table-1.

TABLE 1

ANCOVA RESULTS ON MOVING TOE TOUCH PERFORMANCE OF THE THREE GROUPS

Test	Control Group	P.L.Training Group	C.P.W.Training Group	SoV	SS	Df	MS	'F'
Pre test	12.93	13.00	13.13	B	0.31	2	0.15	0.20
Mean SD	0.79	0.92	0.91	W	32.66	42	0.77	
Posttest	13.00	16.20	17.00	B	134.40	2	67.20	99.38*
Mean SD	0.92	0.56	0.92	W	28.40	42	0.67	
Adjusted Post test Mean	12.98	16.19	17.02	B	135.49	2	67.74	101.75*
				W	27.29	41	0.66	

*** Significant of 0.05 level**

Table-1 shows that the pretest means on moving Toe touch performance of control group, P.T.G and CPW group are 12.93, 13.00 and 13.13 respectively. The obtained 'F' ratio value of 0.20 for pretest mean is lesser than the required table value of 3.22 for significance at 0.05 level. The posttest mean on moving Toe touch performance of control group, P.T.G and CPW training group are 13.00, 16.20 and 17.00 respectively. The obtained 'F' ratio value of 99.38 for post-test data is greater than the required table value of 3.22 for significance at 0.05 level. The adjusted posttest mean on moving Toe touch performance of control group, P.T.G and CPW, are 12.98, 16.19, and 17.02 respectively. The obtained 'F' ratio value of 101.75 for adjusted post-test data is greater than the required table value of 3.22 for significance at 0.05 level. It reveals that there is a significant difference among the groups on moving Toe touch performance as a result of Plyometric training and combined weight training group. Since, the obtained 'F' ratio for adjusted means is significant, the Scheffe'S posthoc test was applied to find out the significant paired mean difference, and it is presented in table - 2.

TABLE 2

SCHEFFE'S POST-HOC TEST TO FIND PAIRED MEAN DIFFERENCE

Adjusted Post Test Means			MD	CI
Control Group	Plyometric Training	Combined Plyometric with weight Training		
12.98	16.19		3.21*	0.86
12.98		17.02	4.04*	0.86
	16.19	17.02	0.83*	0.86

*** Significant of 0.05 level**

Table-2 shows that the mean differences on moving Toe touch performance between the control group and PT group is 3.21; between P.T.G and CPW group is 0.83; Control and CPW group is 4.04 are significant, since the obtained mean difference are higher than the confidence interval value of 0.05 level of significance.

4. DISCUSSION

The data were analyzed by applying Analysis of Covariance (ANCOVA) among the three groups. Whenever, the obtained 'F' ratio for adjusted post-test was found to be significant, the Scheffe's test was applied to find out the significant paired mean differences, if any. The level of significance was set at a 0.05 level. Results indicated the statistically insignificant difference among control and P.T.G and CPW group on moving toe touch before the commencement of plyometric training and Combined weight training. Results also reveals that both experimental groups have significantly increased the moving Toe touch performance as compared to the control group. Further, the improvement of moving Toe touch performance is significantly higher for P.T.G and CPW compared to the control group but the CPW group was slightly better than P.T.G.

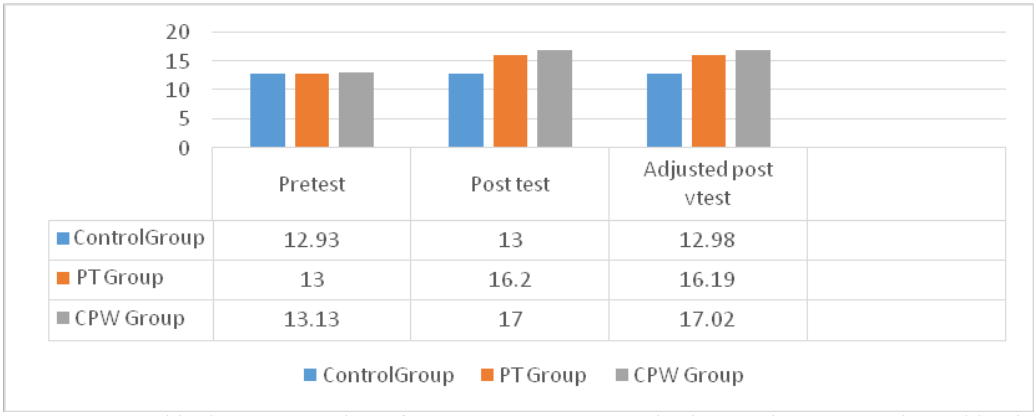

Figure- I: Graphical Representation of Pretest, Posttest Control, Plyometric group, and Combined Plyometric with weight Training Groups on Moving Toe Touch performance

5. CONCLUSION

The major finding of this study was both plyometric training and plyometric combined with weight training regiments contributed to the enhancement of the selected dependent variable. But the plyometric training combined with weight training was better than the plyometric training. The plyometric training combined with weight training was good enough to develop the Moving Toe touch skill performance.

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