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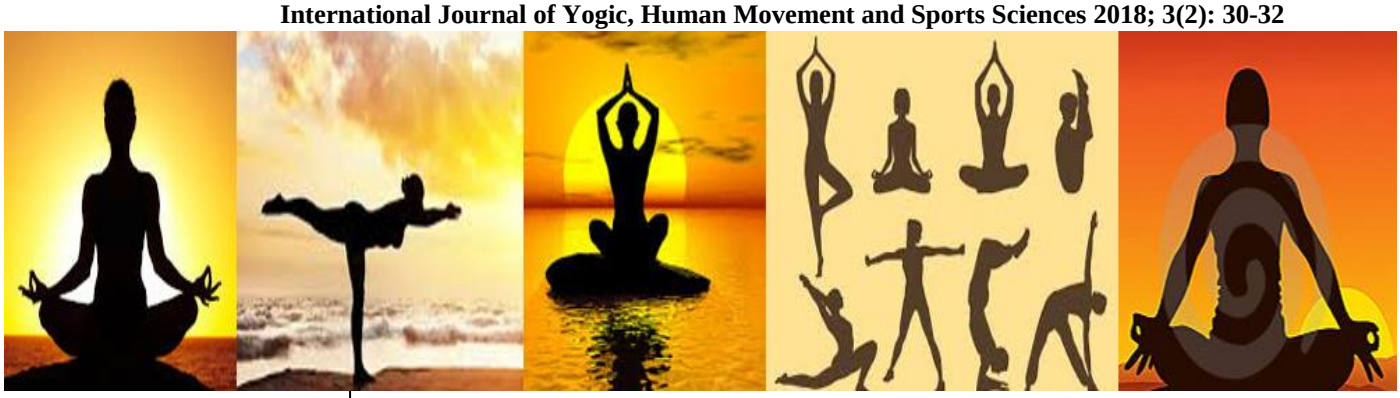

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Effect of drop jump training on biomotor variables among football players

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Abstract
The purpose of the study was to find out the effect of drop jump training on selected biomotor variables among football players. Thirty male football players from various colleges affiliated to Madurai Kamaraj University, from Madurai district, Tamilnadu, India, during the academic year 2017-2018 were selected as subjects, the age of the selected subjects were ranged from 18 to 23 years. The selected subjects were divided into two groups namely drop jump training group and control group, Group A underwent drop jump training for eight weeks of three days per weeks. The duration of training session in all the days were between one hour to one and half hour approximately, which included warm-up and warm-down. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The data were collected from each subject before and after the training period and statistically analyzed by dependent't' test which is used to find out the significant improvement on selected criterion variables and Analysis of Covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups on each variables separately. All the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses. There was a significant improvement on speed, agility, Power and coordination due to the effects of the Drop Jump training among Football players. There was a significance difference between Drop Jump training group and control group on speed, agility, Power and coordination among Football players.

Keywords: Drop jump, speed, power and football

Introduction
Today, football is a highly demanding game in which the participants are subjected to numerous actions that require overall strength and power production, speed, agility, balance, stability, flexibility, and the adequate level of endurance, thus making the conditioning of players a complex process. The next step is to investigate methods that produce the integral effects that can be used in the conditioning of soccer players. But, we found that few studies have investigated the training methods that produce the integral effects on various abilities. Within the context of randomized intermittent, dynamic and skilled movement type sports, to which soccer undoubtedly belongs, the integrated effects are wanted. The problem is to decide which type of conditioning should be implemented to improve performance related fitness parameters in football players.

Drop jump
The backbone of plyometric training, also called shock training, is drop jumps and drop jumps. Drop jumps and drop jumps are all about increasing reactive strength. Reactive strength is what takes someone very strong and makes them explosive and powerful. If perform a standing vertical jump as high as we can. Did we drop down into a quarter squats then quickly turn our momentum around to jump? When we dropped into the quarter squat, we were stretching our muscles to build energy for the jump. Drop jump is a vertical jump and among the most often used tests for maximal anaerobic power output of the lower extremities. It is an aggressive eccentric-concentric muscle action which involves utilization of stored elastic energy, called stretch-shortening cycle. If only the plantar flexors of the foot and knee extensors play a role of prime movers in this task, the entire body and lower extremities need to be strongly activated to assure general stiffness and optimal technique.

Drop and drop jumps are very hard on our central nervous system (CNS). Recovery of the CNS is more important than most people realize in vertical jump training. One may not feel like we need a break in between sets of drop jumps, but like his muscles, his CNS needs a few minutes of recovery time between sets. Drop and drop jumps can give extremely helpful for improving vertical jump, but they are extremely hard on our body.

Hypothesis

- There would be significant improvement on selected biomotor variables (speed, agility, Power and coordination) due to the impact drop jump training among Football players.
- There would be significant different among drop jump training groups and control groups on selected biomotor variables (speed, agility, Power and coordination) among Football players.

Methodology

Thirty male football players from various colleges affiliated to Madurai Kamaraj University, from Madurai district, Tamilnadu, India, during the academic year 2014-2015 were selected as subjects, the age of the selected subjects were ranged from 18 to 23 years. As per the available literatures, the following standardized tests were used to collect relevant data on the selected variable and they were presented in the Table I.

Table 1: Variables & Tests

Variables	Test items	Unit of Measurement
Speed	50 meters dash	Seconds
Agility	'T'- Test	Seconds
Power	Sargent jump	Centimetres
Coordination	Alternate hand wall toss test	Numbers

The selected subjects were divided into two groups namely drop jump training group and control group, Group A underwent drop jump training for eight weeks of three days per weeks. The duration of training session in all the days were between one hour to one and half hour approximately, which included warm-up and warm-down. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The data were collected from each subject before and after the training period and statistically analyzed by dependent 't' test which is used to find out the significant improvement on selected criterion variables and Analysis of Covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups on each variables separately. All the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses.

Analysis of the data

The analysis of dependent't' test on the data obtained for Speed, Agility**,** Power and coordination of the pre-test and post-test means of drop jump training and control groups have been analysed and presented in table II.

Table 2: The summary of mean and dependent 't' test for the pre and post tests on speed, agility, power and coordination of drop jump training and control groups

S. N	Variable	Test	Drop Jump Training Group	Control group
1.	Speed	Pre test mean	7.87	8.885
		Post test mean	7.44	8.877
		't' test	6.72*	0.13
2.	Agility	Pre test mean	11.00	10.996
		Post test mean	10.18	10.989
		't' test	3.95*	0.16
3.	Power	Pre test mean	35.50	36.91
		Post test mean	48.83	36.83
		't' test	12.92*	0.15
4.	Coordination	Pre test mean	23.67	23.08
		Post test mean	28.42	23.17
		't' test	17.05*	0.18

* The table value required for .05 level of significance with df 11 is 2.20.

The Table II show that the pre-test mean value of speed, agility, Power and Coordination in Drop Jump training group and control group are 7.87 & 8.885; 11 & 10.996; 35.50 & 36.91 and 23.67 & 23.08 respectively and the post test means are 7.44 & 8.877; 10.18 & 10.989; 48.83 & 36.83 and 28.42 & 23.17 respectively. The obtained dependent t-ratio values between the pre and post test means of speed, agility, Power and coordination in Drop Jump group are 6.72, 3.95, 12.92 and 17.05. The obtained dependent t-ratio values between the pre and post test means of speed, agility, Power and coordination in control group are 0.13, 0.16, 0.15 and 0.18 respectively. The table value required for significant difference with df 11 at 0.05 level is 2.20. Since, the obtained 't' ratio value of experimental group is greater than the table value, it is understood that ladder training group had significantly improved the speed, agility, Power and coordination. However, the control group has not improved significantly because the obtained 't' value is less than the table value, as they were not subjected to any specific training. The analysis of covariance on speed, agility, Power and coordination of Drop Jump training and control groups have been analysed and presented in Table III.

Table 3: Analysis of covariance of drop jump training and control groups on speed, agility, power and coordination

S. No	Variable	Adjusted post test mean		Source	SS	Df	MS	F
		DJT	CON					
1.	Speed	7.46	7.87	SSB	0.99	1	0.99	25.45*
				SSW	0.82	21	0.04	
2.	Agility	10.01	10.99	SSB	5.72	1	5.72	15.37*
				SSW	7.81	21	0.37	
3	Power	49.3	36.36	SSB	936.36	1	936.36	122.42*
				SSW	160.63	21	7.65	
4.	coordination	28.72	23.43	SSB	165.26	1	165.26	93.84*
				SSW	36.98	21	1.76	

*Significant at .05 level of confidence, (The table values required for significance at .05 level of confidence with df 1 and 21 is 4.32)

The table III shows that the adjusted post test means of speed, agility, Power and coordination of Drop Jump training and control groups are 7.46 & 7.87; 10.01 & 10.99; 49.3 & 36.36 and 28.72 & 23.43 respectively. The obtained 'F' ratio value of speed, agility, Power and coordination are 25.45, 15.37, 122.42 and 93.84 which are higher than the table value of 4.32 with df 1 and 21 required for significance at 0.05 level. Since the value of F- ratio is higher than the table value, it indicates that there is significant difference among the adjusted post test means of Drop Jump training and control groups on speed, agility, Power and coordination. The results of the study showed that there was a significance difference between the adjusted post test mean of Drop Jump training group and control group on speed, agility, Power and coordination among Football players.

Conclusion

1. There was a significant improvement on speed, agility, Power and coordination due to the effects of the Drop Jump training among Football players.
2. There was a significance difference between Drop Jump training group and control group on speed, agility, Power and coordination among Football players.

References

1. Blackey JB, Southard D. The combined effects of weight training and plyometrics on dynamic leg strength and power. J Appl Sport Sci Res. 1987; 1:14-16.
2. Bobbert MF. Drop jumping as a training method for jumping ability. Sports Med. 1990; 22:97-22.
3. Chimera NJ, Swanik KA, Swanik CB. Effects of plyometric training on muscle-activation strategies and performance in female athletes. J Athl Train. 2004; 31:3924-31.
4. Gehri DJ, Richard MD, Kleiner DM, Kirkendall DT. A comparison of plyometric training techniques for improving vertical jump ability and energy production. J strength Cond Res. 1998; 12:85-89.
5. Kotzamanidis C. Effect of plyometric training on running performance and vertical jumping in prepubertal boys. J Strength Cond Res. 2006, 20441-445.
6. Little AD, Wilson GJ, Ostrowski KJ. Enhancing performance: maximal power versus combined weights and plyometrics training. J Strength Cond Res. 1996; 179:10173-179.
7. Matavuji D *et al*. Effects of plyometric training on jumping performance in junior basketball players, Sports Meddicine Physical Fitness. 2001; 41(2):159-64.
8. James Radcliffe C. High powered plyometric, The backbone, 1999. Retrieved from http://www.verticaldunk.com/drop-jumps-depth-jumps-best-plyometric-exercises, on 30, Jan 2012.
9. Roberg Robert A, Robert Scott O. Exercise physiology: Exercise, performance and clinical application, St. Louis, Missouri: Mosby, 1997, 411.