



EFFECTS OF PLYOMETRIC AND FARTLEK TRAINING ON AGILITY PERFORMANCE OF JNTU UNIVERSITY INTER - COLLEGIATE KABADDI PLAYERS

GEDDAYI SARIKA¹, Assistant Professor(P.D), S.R.K.R Engineering College (Autonomous), Bhimavaram, Andhra Pradesh.

OM PHANI NICHENAKOLLA², Research Scholar, Department of Physical Education And Sports Sciences, Andhra University, Visakhapatnam

Abstract

The purpose of the study was effects of Plyometric and Fartlek training on Agility performances of Male Inter Collegiate Kabaddi players. 60 Male Inter Collegiate Kabaddi players from JNTU University, affiliated colleges, Kakinada. The selected subjects were of age group ranging from 18 to 26 years. The subjects were randomly divided into three groups and each group consisted of 20 subjects. Group-I underwent isolated fartlek training, Group-II was isolated plyometric training, and group-III act as control group was not given any special treatment. The experimental period was 12 weeks. Pre-test and posttest were taken before and after the training programme. The selected physical variables were agility. During the intervention phase, a modified training program was offered by a well-trained Kabaddi coaches to the experimental group under the supervision of the researcher at JNTU University, affiliated colleges, Kakinada. All participants were encouraged to continue their standard physical activities and routine procedures. The intervention phase 12 weeks and included morning 60 minutes and evening 60 minutes Kabaddi coaching classes for alternative days in a week. To find out the significant Effects of fartlek and plyometric training on selected physical variable. The ANCOVA statistical technique was used to find the mean difference between the groups on physical variables. The results of the study revealed a significant group \times test interaction ($p < 0.05$). Follow-up analyses indicated that while no group differences in physical variables existed between the four groups of the pre-test. In posttest all the experimental groups were found to have significantly ($p < 0.05$) better performance on the physical variables than the control group. The findings of the present study suggest that plyometric training improved the physical variables in collegiate Male Kabaddi players.

Keywords: Fartlek Training, Plyometric Training, Agility, Kabaddi Players.

INTRODUCTION

Sports are integral part of the system of education. Training is a system of process in which Male Kabaddi players improve their fitness to meet the demands of their sport. Training uses both general and specific exercises to develop the Male Kabaddi players for their sport. Fartlek training refers to the training that uses some kind of fartlek to the contraction of a muscular force. In this training, the effort is normally performed more efficiently operating the Male Kabaddi players. Plyometric training involving repeated rapid stretching and contracting of muscles to increase muscle power. The plyometric training system can provide great amounts of energy but this system fatigues quickly. People participating in speed or power events like Kabaddi, Kho-Kho, Basketball And Football are very familiar with this form of energy production.

METHODOLOGY

To achieve the purpose of the present study, 60 Male Inter Collegiate Kabaddi players were selected from JNTU University Affiliated colleges, Kakinada, who had participated in the inter-collegiate level tournaments. They were selected at random as subjects. All the subjects were residents of Andharapradesh State and they had a similar academic work and regular activities in accordance with the requirements of their college curriculum. The selected subjects were of age group ranged from 18 to 26 years. The subjects were randomly divided into three groups and each group consisted of 20 subjects. Group-I underwent isolated fartlek training, Group-II was isolated polymeric training, and Group-III act as control group was not given any special treatment. The study was conducted 12 weeks training schedule. Agility was selected as a dependent variable and it was tested through 10 meters Shuttle run test. Pre-test-post-test-random group-research design was followed in this study. To find out the significant effects of aerobic and anaerobic training on selected agility, analysis of covariance (ANCOVA) was computed for the data collected aerobic, anaerobic, combined and control groups during pretest and posttest separately for each variable. Further to state, since four groups were involved, whenever the F ratio was significant, Scheffe's post hoc test was used

Table 1: Computation of Analysis of Covariance of Agility

Test	Polymeric Training	Fartlek Training	Control	Source Of Variance	Sum Of Squares	Df	Mean Squares	Obtained F
Pre Test	14.86	15.05	14.8	Between	0.56	5	0.25	
Mean				Within	5.95	86	0.09	2.76
Post Test	14.56	14.98	14.8	Between	0.68	5	0.28	
Mean				Within	5.03	86	0.08	3.86*
Adjusted	14.68	4.89	15.8	Between	0.95	5	0.38	
Post test Mean				Within	2.33	85	0.05	19.75*
Mean Dff	-0.53	-0.36	-0.23					

Table F-ratio at 0.05 level of confidence for 5 and 86 (df) =3.73, 5and 85(df) =3.73. *Significant

As shown in Table 1, obtained F ratio of 2.76 on pretest means of the groups is not significant at 0.05 levels. This shows that there is no significant difference among the means of the groups at the initial stage and hence the random assignment of the groups is successful. The obtained F ratio on posttest means is 3.86*, and is significant at 0.05 level, being greater than the required F value of 3.73 to be significant at 0.05 level. Taking into consideration the pretest means and posttest means, adjusted posttest means The post hoc analysis of obtained ordered adjusted means prove that (1) there are significant differences between Fartlek Training and Plyometric Training groups (2) Fartlek and Control group (3) Plyometric and Control Group and. It is found that (1) there was no significant difference between Fartlek and Plyometric Group.

DISCUSSIONS ON FINDINGS

As shown in Table 1, the obtained F value on the scores of pretest means (2.76) is less than the required F value, which proves that the random assignment of the subjects were successful and their scores in agility before the training were equal and there were no significant differences. Taking into consideration the pretest means and posttest means, adjusted posttest means are determined and analysis of covariance is done and the obtained F value 19.75 is greater than the required value of 3.73 and hence it is accepted. This shows that the interventional programmes significantly improve agility of the collegiate Male Kabaddi players. The post hoc analysis of obtained ordered adjusted means prove that there are significant differences between (1) Fartlek group and Control group (2) Plyometric group and control group. Comparing between the treatments groups, it is found that (1) there are

significant differences between Fartlek group and Plyometric group. Thus, it is proved that while Fartlek group and Plyometric group improve agility of the college determine which of the paired mean differed significance 0.05 was fixed.

RESULTS AND DISCUSSION

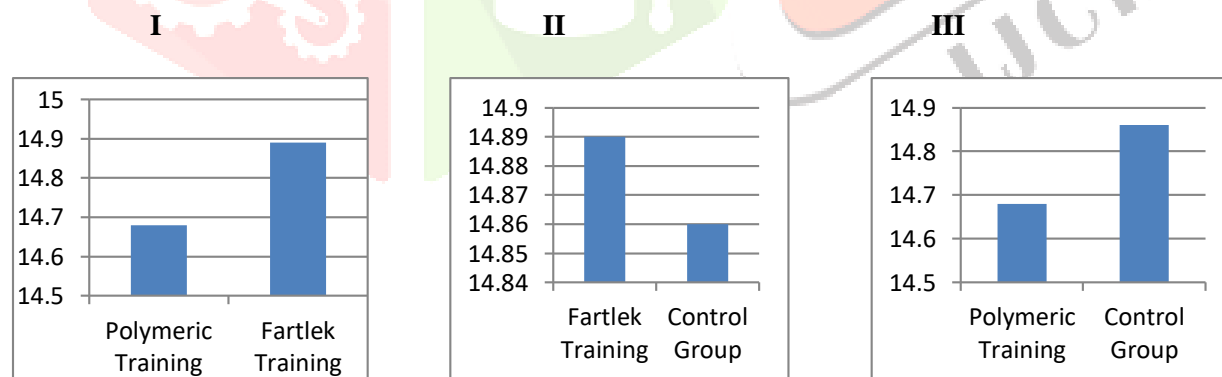
The statistical analysis comparing the initial and final means of agility due to effect of Fartlek and Plyometric Training on selected physical fitness variable namely, agility among collegiate Male Kabaddi players is presented in Table 1. are determined and analysis of covariance is done and the obtained F value 19.75*is greater than the required value of 3.73 and hence it is accepted. This shows that there are significant differences among the adjusted means on the collegiate Male Kabaddi players. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results are presented in Table 2.

Table2: liScheffe's Confidence Interval Test Scores On Agility

Polymeric Training	Fartlek Training	Control Group	Mean of Dff	C.I
14.68	14.89		0.28*	0.24
	14.89	14.86	0.23*	0.24
14.68		14.86	0.39*	0.24

Male Kabaddi players compared to control group, Plyometric group is better than improving agility of the collegiate Male Kabaddi players and the differences are significant at 0.05 levels. Bames Schilling and Falvo (2007) found large magnitude of differences on jumping and agility performance among different categories of athletes and agility covers 41% of the variance of performance. Under the twelve weeks Fartlek and Plyometric training the subjects were induced to exert more energy and training themselves. The findings proved that the twelve weeks Fartlek and Plyometric training had significant influence in improving agility of the Male Kabaddi players. The finding of this study is in agreement with the findings of Bames Schilling and Falvo who found significant improvement in run time, agility and improved performance due to frequent training protocol.

Bar Diagram On liScheffe's Confidence Test Scores On Fartlek Training, Polymeric Training and Control Group



CONCLUSIONS

1. It is concluded that effects of fartlek and plyometric training Significantly improve agility of the college Male Kabaddi players.
2. The comparing among the treatment groups, the plyometric training would be better than fartlek training group and control agility of collegiate Male Kabaddi players.

REFERENCES

1. Bames, et al., (2007), "Relationship of jumping and agility performance in female volleyball athletes." **J Strength Cond Res.** Nov;21(4):1192-6
2. Sk. S. A., Ghosh, M. C. & Adhikari, S. (2007). Analytic Hierarchy Process to Evaluate Individual Performance in Kabaddi. Paper presented in the 8th Annual Conference of West Bengal Association of Sports Medicine, January 20, 2007.
3. Gerard Taylor. Capoeira Conditioning: How to Build Strength, Agility, and Cardiovascular Fitness Using Capoeira Movements. 2005.
4. Hawley J, Burke L. Peak Performance: training and nutritional strategies for sport. Allen & Unwin, 1998.
5. Marques, M., Van Den Tillaar, R., Gabbett, T., Reis, v. M., González-Badillo, J. J. (2009). Physical Fitness Qualities of Professional Volleyball Players: Determination of Positional Differences. *The Journal of Strength & Conditioning Research*, 23(4), 1106–1111.10.1519/JSC.0b013e31819b78c4.
6. Sekulic, D., Spasic, M., Mirkov, D., Cavar, M., Sattler, T. (2013). Gender-Specific Influences of Balance, Speed, and Power on Agility Performance, *The Journal of Strength & Conditioning Research*, 2017(3), 802-811. Doi: 10.1519/JSC.0b013e31825c2cb0
7. . Jadhav, K., M. (2011). Role of Yoga in Kabaddi Sport. *Golden Research Thoughts*, Vol.1, Issue.II.
8. Horicka, P., Hianik, J., Šimonek, J. (2014). The Relationship between Speed Factors and Agility In Sport Games. *Journal of Human Sport & Exercise*, 9(1), 49-58 10.4100/Jhse.2014.91.06
9. Jovanovic, M., Sporis, G., Omrcen, D., Fiorentini F. (2011). Effects of Speed, Agility, Quickness Training Method on Power Performance In Elite Soccer Players. *Journal of Strength and Conditioning Research*, 25(5), 1285-1292. 10.1519/JSC.0b013e3181d67c65
10. Young, W. B., Mcdowell, M. H., and Scarlett, B. J. (2001) Specificity of Sprint and Agility Training Methods. *The Journal of Strength & Conditioning Research*, 15: 315–319.
11. Andrew B. Carter et al. (2007) ; Effects Of High Volume Upper Extremity Plyometric Training On Throwing Velocity And Functional Strength Ratios Of The Shoulder Rotators In Collegiate Baseball Players ;208- 215;
12. Sale DG (2002). Postactivation potentiation: Role in human performance. *Exercise and Sport Sciences Reviews* 30 138-143.
13. Gulich A and Schmidtbleicher D (1996). MVC-induced short- term potentiation of explosive force. *New Studies in Athletics* 11 67-81. Herrero JA, Izquierdo M, Maffiuletti NA and Garc'ia-Lo'pez J (2006). Electromyostimulation and plyometric training effects on jumping and sprint time. *International Journal of Sports Medicine* 27 533– 539.
14. Arazi H and Asadi A (2011). The effect of aquatic and land plyometric training on strength, sprint, and balance in young basketball players. *Journal of Human Sport & Exercise* 6(1) 101-111.
15. Herrero JA, Izquierdo M, Maffiuletti NA and Garc'ia-Lo'pez J (2006). Electromyostimulation and plyometric training effects on jumping and sprint time. *International Journal of Sports Medicine* 27 533– 539.
16. Verma, A., Rana, D and Singh, A. (2011). To Develop Physical Profile of Kabaddi Players: The Descriptive Study. *Indian Journal of Movement Education and Exercises Sciences. (IJMEES)*, Vol. I No. 1.
17. . Gary J. Berg (1969). Relationship between Selected Body Measurements and Success in the Standing Broad Jump. *Completed Research in Health Education and Recreation* 11, Clark H. Best and N.B Taylor (1972). *The Body* (London Champion and Hall Limited).
18. . Crang D. Spirduso (1973). Relationship between Strength and Speed Affected by Limb Length. *Completed Research in Health, Physical Education and Recreation* 15.