Research Paper Physical Education

Effect of Different Approach of Endurance Training on Selected Biomotor Ability of College Basketball Players

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ABSTRACT

The aim of the study was to find out the effect of different approach of endurance training on selected biomotor ability of college basketball players. To achieve the purpose of the study 30 college basketball players from various colleges in Chennai how have regularly practicing were selected as subjects. The selected subjects were assigned into two experimental and a control group consist of ten in each group. The training models were used for 16 weeks in sessions conducted 3 times a week during 90 minutes each. The specific endurance training and general endurance training were selected as training protocol. The control group did not undergo any specific training apart from the daily routine. The biomotor variables such as speed and explosive power were tested by using 50 m dash and Sarjent jump on before and immediately after the training programme. The collected data's were statistically examined by using ANCOVA further the scheffe's post hoc test was applied to know the paired mean difference if any. The result shows that the specific endurance training and general endurance training were shows significant improvement of biomotor ability.

KEYWORDS Endurance, Training, Biomotor, Basketball

INTRODUCTION

The importance of developing good conditioning programs based on the specific physiological demands of each sport is considered a key factor to success (Taylor, 2004). Basketball requires tremendous endurance, speed, agility, and power (Siegler et al., 2003). At the elite level, research has identified the intermittent high intensity exercise as predominant and fitness Training modalities in basketball improvements to this activity pattern have further been defined as power endurance (Siegler et al., 2003). The researches also found statistical significant correlations between the mean power output calculated in the control dribble, speed dribble, high intensity shuttle run, shuttle run and dribble. Thus, it seems clear that the physiological requirements of men's senior and junior elite basketball are high, placing considerable demands on the cardiovascular and metabolic response of players to intermittent exercise. The specificity principle of training seems that basketball training models should be based on competition physiological determinants (Taylor, 2003; 2004) and, basketball practices should prepare players to respond adequately to these requirements. At the youth level, training models have traditionally focused on increasing general endurance, but no attention has been given to intermittent high intensity training, an aspect so crucial in basketball (Sampaio et al., 2004). Therefore, it seems clear that the physical fitness of basketball players and, consequently, game performance can be influenced by these two different training approaches and that no literature is available to report these training modalities chronic effects. Thus, the purpose of this study was to identify the effect of different endurance training approach to improve the explosive power and speed of basketball players.

METHODOLOGY

For the purpose of the study 30 college basketball players from various colleges in Chennai how have regularly practicing were selected as subjects. The selected subjects were assigned into three groups namely specific endurance group (n = 10), general endurance group (n = 10) and control group (= 10). The training models were used for 16 weeks in sessions conducted 3 times a week during 90 minutes each. The specific endurance training group underwent the training such as ball passing, ball dribbling. ball shooting, Short pauses , free-throw shooting and a long pause with high intensity of individual heart rate. The general endurance-training group underwent the moderate intensity interval training such as running, jogging, sideward run and so on. The control group did not undergo any specific training apart from the daily routine. The biomotor variables such as speed and explosive power were tested by using 50 m dash and Sarjent jump on before and immediately after the training programme. The collected data's were statistically examined by using ANCOVA for find the significance among the group on each criterion variable. If the obtained 'f' ratio was found to be significant, the scheffe's post hoc test was applied to know the paired mean difference if any. The level of confidence was fixed at .05.

Result

Table – I

ANALYSIS OF CO-VARIANCE AMONG EXPERIMENTAL GROUPS AND CONTROL GROUP ON SELECTED BIO-MOTOR VARIABLES

Variables	Specific Endurance Group	General Endurance Group	Control group	SOV	SOS	df	Ms	'F' Ratio
Speed	6.28	6.48	6.67	B	.509	2	.255	75.54*
				W	.088	26	.003	
Explosive power	26.24	25.85	24.10	B	26.11	2	13.0	26.11*
				W	12.99	26	.50	

*** Significant at .05 level of confidence.**

(The table values required for significance at .05 level of confidence for 2 and 26 is 3.37).

The table – I shows that, there was a significant difference among experimental groups and control group on speed and explosive power.

Table - II
SCHEFFE'S POST HOC TEST ON THE DIFFERENCE BETWEEN PAIRED MEAN ON SELECTED BIOMOTOR VARIABLES

Variables	Specific Endurance Group Vs General Endurance Group	Specific Endurance Group Vs Control group	General Endurance Group Vs Control group	Confidence Interval
Speed	0.20	0.39*	0.19	0.28
Explosive Power	0.39	2.14*	1.75*	1.61

The table – II shows that, there was a significant difference found between specific training group and control group on speed and explosive power. Also there was a significant difference found between general endurance group and control group on explosive power. Further, there was no significant differences found on rest of the paired mean differemce on speed and explosive power. Hence, the result shows that the specific endurance group found significant increase on biomotor performance. The result also shows similarity between general endurance and control group on speed.

DISCUSSIONS

The similar researches that support to the result of the present study were discussed. Our results suggest that specific endurance training modalities were able to maintain initial values of speed and power. Therefore the ultimate goal of training modelling is to optimize performance (Kuipers, 1996; Taylor, 2003). Designing research-based basketball training protocols for young players is difficult, because there are no validated sport-specific measures to evaluate adolescent basketball-specific training. Additionally, our main concern was to identify the changes not in the preseason but in the competition period. From an overall analysis, it is clear that the 4 months of training modelling have produced different adaptations on players' physical fitness. Also, it is probable that subjects from specific endurance could be less fatigued throughout the competitions, and could show a better level of fitness throughout the season (Hoffman et al., 2000). In fact, the metabolic requirements of the basketball game are both aerobic and anaerobic (Stone and Steingard, 1993).

CONCLUSION

Finally, the study concluded that, the specific endurance group found positive increase on speed and explosive power. There was no significance difference found between specific endurance group and general endurance group on speed and explosive power. In addition, the result also shows that, there was no significant difference between general endurance group and control group on speed.

REFERENCES

Hoffman, J., Epstein, S., Einbinder, M. and Weinstein, Y. (2000) A Comparison between the Wingate anaerobic power test to both vertical jump and line drill tests in basketball players. Journal of Strength and Conditioning Research 3, 261-264. | Kuipers, H. (1996) How much is too much? Performance aspects of overtraining. Research Quarterly for Exercise and Sport 67, 65-69. | Sampaio, J., Ibáñez, S. and Feu, S. (2004) Discriminative power of basketball game-related statistics by level of competition and sex. Perceptual and Motor Skills 99, 1231-1238. | Siegler, J., Gaskill, S. and Ruby, B. (2003) Changes evaluated in soccer-specific power endurance either with or without a 10-week, in-season, | intermittent, high-intensity training protocol. Journal of Strength and Conditioning Research 2, 379-387. | Stone, W. and Steingard, P. (1993) Year-round conditioning for basketball. Clinics in Sport Medicine 2, 173-191. | Taylor, J. (2003) Basketball: applying time motion data to conditioning. Strength and Conditioning Journal 2, 57-64. | Taylor, J. (2004) A tactical metabolic training model for collegiate basketball. Strength and Conditioning Journal 5, 22-29.