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Effect of strength training with sports specific drills on physiological and skill performance variables of adolescent basketball players

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Abstract

This study was investigated the impact of strength training with sports specific drills training on physiological and skill performance variables of adolescent basketball boys. To achieve the purpose of the study 40 adolescent soccer boys were selected from various schools in Andhra Pradesh. The subjects was randomly assigned to two equal groups (n=20). Group- I underwent strength training with sports specific drills training (STWSD) and group - II was acted as control group (CG). The strength training with sports specific drills training was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work. The selected parameters of VO₂ max (queen college step test) and passing (Johnson basketball skill test) before and after training period. The data collected from the subjects was statistically analysed with 't' test to find out significant improvement if any at 0.05 level of confidence. The result of the present strength training with sports specific drills training significantly improved flexibility and dribbling of adolescent basketball players.

Keywords: Strength training with sports specific drills training, vo₂ max, passing and adolescent basketball players

Introduction

Most games, the rules are more significant than the components. But there are games where these roles are reversed: where the components are significant and the rules not very important at all. Usually, these are action games like Looping Louie. The components are the hardware, the rules are the software. Both define the game. Both can exist independently from each other, but separately are not a game. Archeology finds ancient game boards and game pieces, but no one knows what rules these ancients used to play their games. We will never know how these games were played.

Strength training for the fast-bowler consists of a series of exercises performed with light weights, Thera band or body weight. The exercises should be performed in high repetitions with short rest periods in order to enhance muscular endurance. Young schoolboys should start with body weight exercises and progress through Thera band exercises to weight-training. Weight training should be initiated under supervision. Incorrect use of weights such as incorrect body position, uncontrolled movement or using weights which are too heavy, place the fast-bowler at considerable risk for injury. Gym machines are not as effective as body weight, Thera band or free weight exercises in that they are limited to movement in one direction. The fast bowling action requires simultaneous movement in all three planes, which can be achieved using these three forms of exercise.

Methodology

In this study the selected 40 adolescent basketball players selected from various school in Andhra Pradesh. The subjects were randomly assigned in to two equal groups namely, (STWSD) (n=20) and Control group (CG) (n=20). The respective training was given to the experimental group the 3 days per weeks (alternate days) for the training period of twelve weeks. The control group was not given any sort of training except their routine. The evaluated

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selected parameters were Vo2 max was assessed by queen college step test and the unit of measurement was in ml/kg/lit, and Passing was assessed by Johnson basketball skill test the unit of measurement in points.

Training programme

The training programme was lasted for 60 minutes for session in a day, 3 days in a week for a period of 12 weeks duration. These 60minutes included 10 minutes warm up, 20 minutes for strength training, 20 minutes for Sports specific drills and 10 minutes and warm down. The equivalent in strength with

sports specific drills training is the length of the time each action in total 3 day per weeks (Monday, Wednesday and Friday).

Statistical analysis

The collected data before and after training period of 12 weeks on the above said variables due to the effect of strength with sports specific drills training was statistically analyzed with ‘t’ test to find out the significant improvement between pre and posttest. In all cases the criterion for statistical significance was set at 0.05 level of confidence. (P < 0.05)

Table I: Computation of ‘t’ ratio on Vo2 max and passing on experimental group and control group (Scores in numbers)

Group	Variables	Mean	N	Std. Deviation Pre	Std. Deviation Post	T ratio
Experimental Group	Vo2 Max	Pre test	875.50	3.61	3.54	12.92*
		Post test	885.60			
	Passing	Pre test	23.72	0.04	0.02	
		Post test	23.38			
Control group	Vo2 Max	Pre test	876.15	1.19	1.78	0.99
		Post test	876.40			
	Passing	Pre test	23.73	1.12	0.89	
		Post test	23.72			

*significant level 0.05 level degree of freedom (2.09, 1 and 19)

Table I reveals the computation of mean, standard deviation and ‘t’ ratio on selected parameters namely Vo2 max and passing experimental group. The obtained ‘t’ ratio on Vo2 max and passing were 12.92 and 15.39 respectively. The required table value was 2.09 for the degrees of freedom 1and 19 at the 0.05 level of significance. Since the obtained ‘t’ values were greater than the table value it was found to be statistically significant.

Further the computation of mean, standard deviation and ‘t’ ratio on selected physical parameters namely Vo2 max and passing control group. The obtained ‘t’ ratio on Vo2 max and passing were 0.99 and 1.39 respectively. The required table value was 2.09 for the degrees of freedom 1and 19 at the 0.05 level of significance. Since the obtained ‘t’ values were lesser than the table value it was found to be statistically not significant.



Fig 1: Bar diagram shows the mean values of pre and post test on vo2 max and passing of control and experimental group

Discussion and findings

The present study experimented the effect of strength with sports specific drills training on selected parameters of adolescent basketball boys. The result of the study shows that the strength with sports specific drills training improved the Vo2 max and passing. The findings of the present study had similarity with the findings of the investigations referred in this study. However, there was a significantly changes of subjects in the present study the Vo2 max and passing was significantly improved of subject in the group may be due to the in strength with sports specific drills training. Subramainiam (2014) [10] the results of the study that after the training programme there was a significant improvement in the speed and vo2 max for training group when compared

with the control group. Ozmen *et al.*, (2016) [11] showed significantly higher increases in speed and passing performance ($p \leq 0.05$). A short-duration (i.e. 6-week) explosive strength training programme in wheelchair basketball athletes results in significant improvements in sprint and agility performance. The result of the present study indicates that the strength with sports specific drills training programme is effective method to improve flexibility and dribbling of basketball players.

Conclusion

It was concluded that 12 weeks of strength with sports specific drills training significantly improved the Vo2 max and passing of adolescent basketball players.

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