



IMPACT OF MULTIDIMENSIONAL TRAINING PLAN ON SELECTED MOTOR FITNESS VARIABLES AMONG COLLEGE FEMALE KABADDI PLAYERS

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Abstract

The objective of the study was to find out the impact of multidimensional training plan on selected motor fitness variables among college female kabaddi players. To conduct the study, 19 female Kabaddi players attending college coaching camp were selected as subject. Age of the subjects was ranged between 18 to 22 years. The subjects were selected from chidambaram region. Speed and agility were selected as dependent variables where speed was measured through 20 meter dash test and agility was measured by 10×4.5 sideward shuffle and 10×6 forward & backward agility run test. The multidimensional training program was considered as Independent Variable. Single group design was used where total subjects, selected for the study were undergone the training programme of college coaching camp which was emphasized on specific performance abilities in different phases of coaching camp. Experiment was conducted throughout the coaching camp. To collect the data for the study Pre-test was administered just before start of the coaching camp and during the training process, mid and post tests were conducted repeatedly on equal intervals of 45 days of training. To find out the significant effect of multidimensional training on speed and agility of college kabaddi campers, paret t test was use. The results show the significant effect of multidimensional training program on speed and agility at 0.05 level of significance. Since the results of 20 metre dash, 10×4.5 sideward shuffle and 10×6 forward & backward agility run was found to be statistically significant, since the obtained t value was found to be higher than the tabulated value. On the basis of findings of this study it may be concluded that the multidimensional training programmes may be useful in the development of speed and agility.

Key words: multidimensional training, speed, agility.

INTRODUCTION

Speed of execution and technical precision are fundamental athletic goals and are interrelated. Movement speed is the result of explosive force but is often incorrectly believed to be independent from or incompatible with strength. Explosive speed – strength applied to functional motor skills in the basis of speed and agility. Running is the basis of many sports and has a ballistic quality common to other movements. However, most sports involve much more than linear sprinting at top speed. The ability to change direction and velocity is often more important in kabaddi game. Changes in direction involve braking actions that are executed by rapidly and forcibly lengthening of the muscles. The inability to withstand such extreme stretch – loading can result in technical inefficiency.

Changing speed and direction also requires the muscles to shorten in an elastic or reactive manner, immediately after the lengthening. Most sports skills involves rapid force generation, force is applied for one to two seconds during many tasks in kabaddi game, whereas absolute maximum force

production requires up to four to six seconds. Even in non ballistic movements, performance is usually determined by the ability to develop forces quickly and achieve a critical power output.

Kabaddi training results generally in two types of output. The first relates to the developed body states and the second, is shown intermediately through those body states in team and individual performance. Both outputs are closely related but the second is dependent upon the first to some extent. The amount of this dependence is determined by many factors. Volleyball training is a long term specialized process, as such, it is based on developing the physical fitness of players. Even though physical fitness is not the main goal, this is the firm basis upon which the development of other states is built. Physical fitness means the adaptation of all body functions to the wide variety of outer and inner stimuli influencing a player.

Long term specialized training must necessarily result in a specialized type of adaptation which better suits the conditions and requirements of kabaddi performance. The specialized adaptation of player to repeat greater efforts and make the level of

the player's organism to work according to desire in specific activity, which is identical in character, as the effort made by players in kabaddi matches. In the consolidated training plan, the proportionate amount of training contents should be kept with keeping in the view to develop all the required abilities in specific time span. The early preparatory phase is mostly for creating a very broad base for further development and makes them able to tackle the training load, where the later stage of preparatory period is likely to be more specific.

PURPOSE OF THE STUDY

The objective of the study was to find out the impact of multidimensional training plan on selected motor fitness variables among college kabaddi players.

METHODOLOGY

Selection of Subjects

The objective of the study was to find out the impact of multidimensional training plan on selected motor fitness variables among college female kabaddi players. To conduct the study, 19 female Kabaddi players attending college coaching camp were selected as subject. Age of the subjects was ranged between 15 to 18 years. Speed and agility were selected as dependent variables where speed was measured through 20 meter dash test and agility was measured by 10×4.5 sideward shuffle and 10×6 forward & backward agility run test. The multidimensional training program was considered as Independent Variable. Single group design was used where total subjects, selected for the study were undergone the training programme of college coaching camp which was emphasized on specific performance abilities in different phases of coaching camp. Experiment was conducted throughout the coaching camp. To collect the data for the study Pre-test was administered just before start of the coaching camp and during the training process, mid and post tests were conducted repeatedly on equal intervals of 45 days of training. To find out the significant effect of multidimensional training on speed and agility of

college kabaddi campers, paired *t* test was use. The results show the significant effect of multidimensional training program on speed and agility at 0.05 level of significance. The multidimensional training program was designed according to specific development during various phases of the coaching camp. The purpose of the coaching camp was to achieve higher performance in inter university level therefore, the contents trained during the complete course of the treatment period was to develop overall playing performance.

Selection of Tests

To measure the speed and agility of the subjects following tests have been used:

Speed - 20 meter dash: recorded in seconds.

Agility - 10×4.5 meter sideward shuffle: recorded in seconds.

- 10×6 meter forward and backward run: recorded in seconds.

Administration of Test

Pre-test was conducted just before the start of coaching camp for all the 19 subjects. The multidimensional training program was controlled through the consolidated training plan of coaching camp which was started with preparatory period in first phase of 45 days where physical preparation was dominated to the total training plan over technical and tactical preparation and mid test was conducted after completion of this phase. In the second phase the treatment was continued where the dominant in total training was technical preparation followed by physical and tactical preparation. Physical preparation was very proportionate for all the motor components in both the phases. Post test was conducted after completion of 45 days of second phase training.

Statistical Analysis

Paired *t* test was used. The level of significance was set at 0 .05 level. The comparison of mean of pre, post and mid tests of different variables of College kabaddi campers is presented in table – 1.

RESULTS

Table-1

Comparison of mean of pre, post and mid tests of different variables of College Kabaddi campers

Variables	Tests	Intervals	N	Mean	s	t	P
Speed	20 meter dash	Pre-test	19	3.1605	.14451	3.581*	.002
		Mid-test	19	3.0005	.12629		
		Pre-test	19	3.1605	.14451	-7.274*	.000
		Post-test	19	2.8847	.10107		
		Mid-test	19	3.0005	.12629	7.734*	.000
		Post-test	19	2.8847	.10107		

Agility	10×6 meter forward & backward shuttle run	Pre-test	19	18.4747	1.19033	2.102*	.050
		Mid-test	19	17.8195	1.10757		
		Pre-test	19	18.4747	1.19033	-6.401*	.000
		Post-test	19	16.9026	.82422		
		Mid-test	19	17.8195	1.10757	-7.185*	.000
		Post-test	19	16.9026	.82422		
	10×4.5 meter sideward shuffle	Pre-test	19	12.7184	.73031	2.426*	.026
		Mid-test	19	12.1926	.67040		
		Pre-test	19	12.7184	.73031	-4.166*	.001
		Post-test	19	11.7684	.67547		
		Mid-test	19	12.1926	.67040	-7.099*	.000
		Post-test	19	11.7684	.67547		

*Significant at .05.

Table - 1 revealed that the significant difference was found between pre test and mid-test in relation to 20 meter dash, ($t(18) = 3.581$, $p = .002$, two- tailed), since t value of this variable was found significant at 0.01. In which mean (\pm SD) value of mid-test is lower than mean (\pm SD) value of pre-test ($3.1605 (\pm 1.14451) > 3.0005 (\pm 1.2629)$). Similarly table 1 also revealed that the significant difference was found between pre-test and post-test of 20 meter dash, ($t(18) = -7.274$, $p = .000$, two- tailed) and mid-test and post-test of speed ($t(18) = 7.734$, $p = .000$, two- tailed), since t value of these variables were found significant at 0.01.

Table - 1 revealed that the significant difference was found between pre-test and mid-test in relation to 10×6 meter forward & backward agility test ($t(18) = 2.102$, $p = .050$, two- tailed), since t value of this variable was found significant at 0.05. In which mean (\pm SD) value of mid-test is lower than mean (\pm SD) value of pre-test ($18.4747 (\pm 1.19033) > 17.8195 (\pm 1.10757)$). Similarly table - 1 also revealed that the significant difference was found between pre-test and post-test of 10×6 meter forward & backward agility ($t(18) = -6.401$, $p = .000$, two- tailed) and mid-test and post-test of agility ($t(18) = -7.185$, $p = .000$, two- tailed), since t value of these variables were found significant at 0.01.

Table - 1 revealed that the in significant difference was found between pre-test and mid-test in relation to 10×4.5 meter sideward shuffle agility test ($t(18) = 2.426$, $p = .026$, two- tailed), since t value of this variable was found significant at 0.05. In which mean (\pm SD) value of mid-test is lower than mean (\pm SD) value of pre-test ($12.7184 (\pm 0.73031) > 12.1926 (\pm 0.67040)$). Similarly table 1 also revealed that the in significant difference was found between pre-test and post-test of 10×4.5 meter sideward shuffle agility ($t(18) = -4.166$, $p = .001$, two- tailed) and mid-test and post-test of agility ($t(18) = -7.099$, p

$= .000$, two- tailed), since t value of these variables were found significant at 0.01.

DISCUSSION OF FINDINGS

The finding of the study reveals that there is significant effect of multidimensional training program on speed and agility of college kabaddi campers. The finding related to 20 meter dash performance show the linear development from pre-test to mid-test and from mid-test to post-test. In comparison to pre-test to post-test also the significant improvement recorded. This improvement may be due to some specific training contents of speed in the total program or other technical and tactical training with very high velocity.

In the case of 10×6 meter forward and backward agility run, the significant improvement found from pre-test period to mid-test period and similarly from mid-test to post-test, there is also significant improvement from pre-test to post-test results. The 10×4.5 meter sideward shuffle agility performance was shown the significant improvement from pre-test to mid-test, mid-test to post test and pre-test to post-test.

The findings pertaining to the significant improvement in speed and agility in all the three test intervals, due to the training contents and load parameters in both the phases. In above variables greater improvement found in second phase due to more specific nature of preparation rather than very general in the first phase. The study was supported by **Berg, K and Latin, R.W**

CONCLUSION

Within the limitation of the study and the procedure followed the conclusion was drawn, which is based on finding where significant difference found in speed and agility. This improvement recorded due to the group of players undergone the National coaching camp where multidimensional training program was undertaken for player's development. Speed and agility programmes were directly included in the physical preparation as well

as it was developed indirectly while preparing other dynamics of Volleyball performance.

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