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EFFECT OF KALARI ADIMURAI TRAINING AND CLOSED KINETIC CHAIN TRAINING ONAGILITY AND DEFENSIVE SKILLS AMONG INTER-COLLEGIATE KABADDI PLAYERS

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The purpose of the study was to find out the effect of Kalari Adimurai training and closed kinetic chain training on agility and defensive skills among inter-collegiate Kabaddi players. To achieve this purpose of the study, forty male kabaddi players were selected at random to study for a bachelor's degree in the Department of Physical Education, AVVM. Sri Pushpam College, (Autonomous) of Physical Education, Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. They were divided into three equal group: the Kalari Adimurai training group (Group I), the Closed Kinetic Chain (CKC) training group (Group II), and the control group (Group III). Groups I and II underwent their respective training programs for three days per week for twelve weeks; they did not undergo any special training programs apart from their regular physical education curriculum. The control group did not go for any training. All the subjects were tested prior to and after the experimental treatment periods on selected criterion variables related to physical fitness. The following physical fitness variables, such as agility and ability, were selected as criterion variables: Agility was assessed by an Illinois Agility Test (IAT), and ability was assessed by a judge rating scale used to measure the performance of defensive skills. All the subjects in the three groups were tested on selected criterion

variables prior to and immediately after the training program as pre- and post-tests. An analysis of covariance (ANCOVA) was used to find out the significant difference, if any, among the groups on each selected criterion variable separately. In all the cases, a.05 level of confidence was fixed to test the significance, which was considered appropriate. There was a significant difference among the Kalari Adimurai training group, the Closed Kinetic Chain (CKC) training group, and the control group on physical fitness variables such as agility and ability.

Keywords: Kalari adimurai training closed kinetic training, agility, and defensive skill ability for the Kabaddi players.

INTRODUCTION

Kabaddi, a popular contact sport in India, requires a combination of agility, strength, and combat skills. In order to excel in this sport, players must constantly work on improving their agility and defensive skills. This is where the training techniques of Kalari Adimurai and Closed Kinetic Chain (CKC) come into play. In this article, we will explore the effect of these training methods on agility and defensive skills among inter-collegiate Kabaddi players.

Kalari Adimurai Training

Kalari Adimurai is a traditional martial art form that originated in Kerala, India. It is known for its dynamic movements, which require a high level of agility and flexibility. The training involves a series of body movements, footwork, and hand gestures that are designed to improve coordination, balance, and speed. These skills are essential for Kabaddi players, as they need to quickly change directions and evade opponents while playing. Improved agility and flexibility Enhanced coordination and balan Increased speed and reaction time Strengthened core muscles Improved body control and awareness.

Closed Kinetic Chain Training

Closed Kinetic Chain (CKC) training is a form of exercise that involves performing movements with the feet or hands fixed to a surface. This type of training is highly beneficial for Kabaddi players as it mimics the movements and actions required in the sport. CKC exercises focus on strengthening the muscles and joints in a functional way, which is crucial for improving agility and defensive skills.

Improved strength and stability in the lower body Enhanced joint stability and balance Increased power and explosiveness Reduced risk of injury Improved overall

athletic performance.

Over the past 20 years, mental health issues have exacerbated physical and mental problems, leading millions of people to practice martial arts for self-defense, physical fitness, and mental health. Kalari Adimurai, an ancient Tamil martial art, promotes self-control, physical prowess, and psychological health through consistent practice. Researchers conducted the first experimental study on Kalari Adimurai, using only a few exercises. Fitness is crucial for excelling in elite sports, especially in short sprints like the 100 and 200 meters. Power components are essential for improved timing and success in athletic competitions. Sports scientists are working to develop

specific training regimens to better understand power in sports. Regular exercise can help reduce diabetes and improve overall health, with cardiopulmonary fitness levels being a key factor in reducing diabetes. Examples of cardiopulmonary exercises include squats, dead lifts, lunges, power cleans, and leg presses.

METHODOLOGY

In this chapter deals with the procedures followed in the selection of the subjects, selection of variables, selection of tests, instrument reliability, reliability of the data, pilot study, orientation to the subjects, training program, collection of data, test administration, experimental design, and statistical procedure.

SELECTION OF SUBJECTS

The purpose of the study was to find out the effect of Kalari Adimurai training and closed kinetic chain training on agility and defensive skills among inter-collegiate Kabaddi players. To achieve this purpose of the study, forty male kabaddi players were selected at random to study for a bachelor's degree in the Department of Physical Education, AVVM. Sri Pushpam College, (Autonomous) of Physical Education, Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. They were divided into three equal groups: the Kalari Adimurai training group (Group I), the Closed Kinetic Chain (CKC) training group (Group II), and the control group (Group III). Groups I and II underwent their respective training programs for three days per week for twelve weeks; they did not undergo any special training programs apart from their regular physical education curriculum. The control group did not go for any training. All the subjects were tested prior to and after the experimental treatment periods on selected criterion variables related to physical fitness. The following physical fitness variables, such as agility and ability, were selected as criterion variables: Agility was assessed by an Illinois Agility Test

(IAT), and ability was assessed by a judge rating scale used to measure the performance of defensive skills. All the subjects in the three groups were tested on selected criterion variables prior to and immediately after the training program as pre- and post-tests. An analysis of covariance (ANCOVA) was used to find out the significant difference, if any, among the groups on each selected criterion variable separately. In all the cases, a.05 level of confidence was fixed to test the significance, which was considered appropriate.

TRAINING PROGRAMME

During the training period, group I underwent a Kalari Adimurai training program, and group II underwent a Closed Kinetic Chain (CKC) training program for three days per week for twelve weeks in addition to their regular physical education activity. Every day's workout lasted about 45–60 minutes, including warm-up and warm-down exercises. Group III acted as a control group and did not participate in any specific training; however, they participated in a regular physical education program.

STATISTICAL ANALYSIS

The data was collected from three groups prior to and after the completion of the training period on selected criterion variables and statistically examined for significant differences, if any, by applying analysis of covariance (ANCOVA). The Scheffe's post hoc test was applied to determine if there was a significant difference between groups if their 'F' ratio was significant. In all cases, a .05 level of confidence was utilized to test the significance.

ANALYSIS OF DATA

The analysis of covariance of the data obtained for muscular endurance of the pre-test and post-test of the Kalari Adimurai training group, Closed Kinetic Chain (CKC) training group, and control group has been presented in Table I.

TABLE - I

ANALYSIS OF COVARIANCE FOR AGILITY ON PRE TEST AND POST TEST DATA OF EXPERIMENTAL AND CONTROL GROUPS

(Seconds)

Pre test Mean	Post test Mean	Adjusted post test means	Sources of Variance	Sum of square	Df	Mean squares	F ratio

KAT G	CKT G	CG	KAT G	CKT G	CG	KAT G	CKT G	CG					
18.91	19.29	20.10	16.12	18.05	19.08	16.34	18.11	18.80	**Between**	40.81	2	20.4	17.57*
± 2.01	± 0.83	± 1.30	± 0.96	± 1.37	± 1.33				**Within**	44.13	38	1.16	

** Significant at 0.05 level.*

*significant at 0.05 level of confidence (The table value required for significance at 0.05 level with df 2 and38 is 3.23)

Table I shows the pre-test means of Kalari Adimurai Training Group, closed kineic training group, and control group are 3.01, 2.86, and 2.85, respectively, and the post-test means of Kalari Adimurai Training Group, closed kinetic training group, and control group are 5.67, 4.21, and the adjusted post-test means of Kalari Adimurai Training Group, closed kinetic training group, and control group are 5.67, 4.21, and 3.00, respectively. The obtained f-ratio is 29.14, which is higher than the table value of 3.23, with df 2 and 38 required for significance. The result of the study indicates that there are significant mean differences in toe touch ability among the adjusted post-test means of the Kalari Adimurai training group, the Closed Kinetic Training Group, and the Control Group at the .05 level of significance. Hence, it is clear that the Kalari Adimurai Training Group, Closed Kinetic training Group, and Control Group significantly improved the defensive skill abilities of the participants. Among these two training groups, the Kalari Adimurai Training Group seems to be the best.

TABLE - II
SCHEFFES POST-HOC TEST FOR MEAN DIFFERENCE BETWEEN GROUPS ON AGILITY
(Seconds)

Kalari Adimurai training group	Closed Kinetic Training Group	Control Group	Mean Difference	Confidence interval
16.34	-	18.11	1.77*	1.03
16.34	18.11	-	2.46*	
-	18.11	18.11	0.69*	

**Significant at 0.05 level of confidence.*

Table II shows that the adjusted post-test mean differences in agility between the Kalari Adimurai Training Group and the Closed Kinetic Training Group are 1.77, the

Kalari Adimurai Training Group and the Control Group are 2.46, and the Closed Kinetic Training Group and the Control Group are 0.69, which are greater than the confidence interval value of 1.03, which is statistically significant at the .05 level of confidence.

FIGURE - I
GRAPHICAL ILLUSTRATION OF PRE - TEST, POST -TEST AND ADJUSTED POST -TEST MEANS OF EXPERIMENTAL AND CONTROL GROUPS ON AGILITY (Seconds)

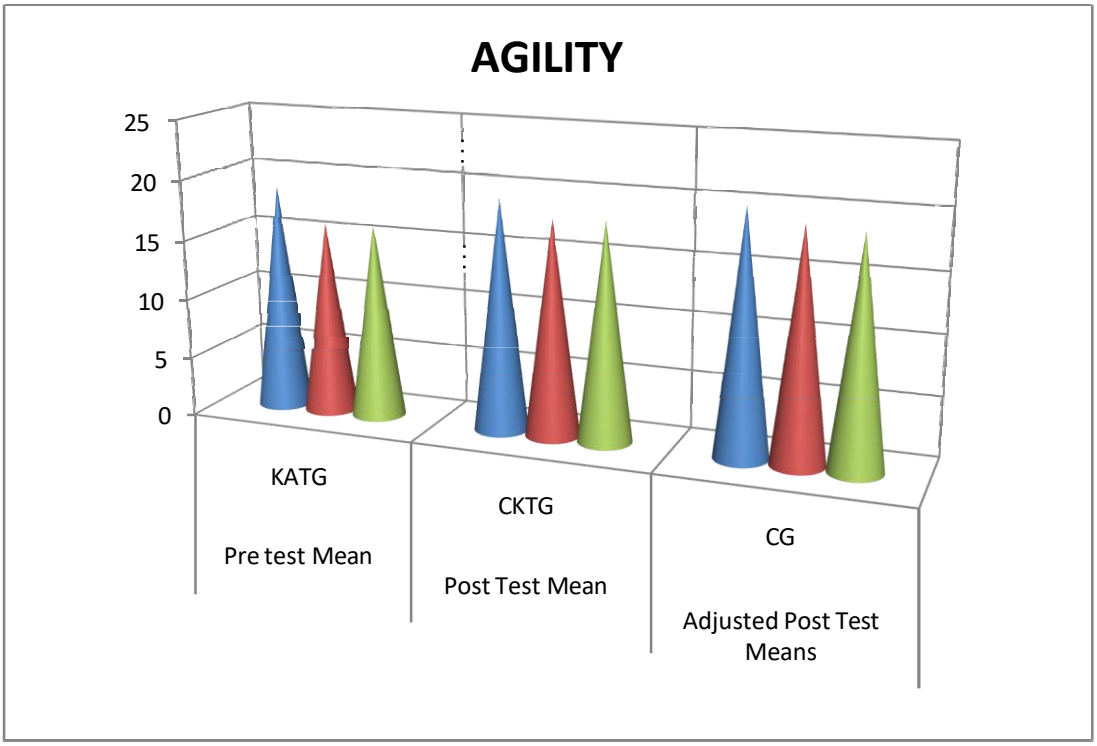


TABLE - III

ANALYSIS OF COVARIANCE FOR DEFFENSIVE SKILL ABILITY ON PRE TEST AND POST TEST DATA OF EXPERIMENTAL AND CONTROL GROUPS

Pre test Mean			Post test Mean			Adjusted post test means			Sources of Variance	Sum of square	Df	Mean squares	F ratio
KATG	**CKTG**	**CG**	**KATG**	**CKTG**	**CG**	**KATG**	**CKTG**	**CG**					
3.01	2.86	2.85	5.67	4.21	3.00	5.67	4.21	3.02	**Between**	51.27	2	25.85	26.8*
± 0.84	± 1.06	± 1.07	± 1.12	± 1.08	± 0.87				**Within**	40.03	38	0.98	

** Significant at 0.05 level.*

*significant at 0.05 level of confidence (The table value required for significance at 0.05 level with df 2 and38 is 3.23)

Table III shows the pre-test means of Kalari Adimurai Training Group, closed kineic training group, and control group are 3.01, 2.86, and 2.85, respectively, and the post-test means of Kalari Adimurai Training Group, closed kinetic training group, and control group are 5.67, 4.21, and the adjusted post-test means of Kalari Adimurai Training Group, closed kineic training group, and control group are 5.67, 4.21, and 3.00, respectively. The obtained f-ratio is 29.14, which is higher than the table value of 3.23, with df 2 and 38 required for significance. The result of the study indicates that there are significant mean differences in toe touch ability among the adjusted post-test means of the Kalari Adimurai training group, the Closed Kinetic Training Group, and the Control Group at the .05 level of significance. Hence, it is clear that the Kalari Adimurai Training Group, Closed Kinetic training Group, and Control Group significantly improved the defensive skill abilities of the participants. Among these two training groups, the Kalari Adimurai Training Group seems to be the best.

TABLE-IV

SCHEFFES POST-HOC TEST FOR MEAN DIFFERENCE BETWEEN GROUPS ON DEFFENSIVE SKILL ABILITY

Kalari Adimurai training group	Closed Kinetic Training Group	Control Group	Mean Difference	Confidence interval
5.67		3.00	2.67*	0.91
5.67	4.21		1.46*	
	4.21	3.00	1.21*	

*significant at .05 level

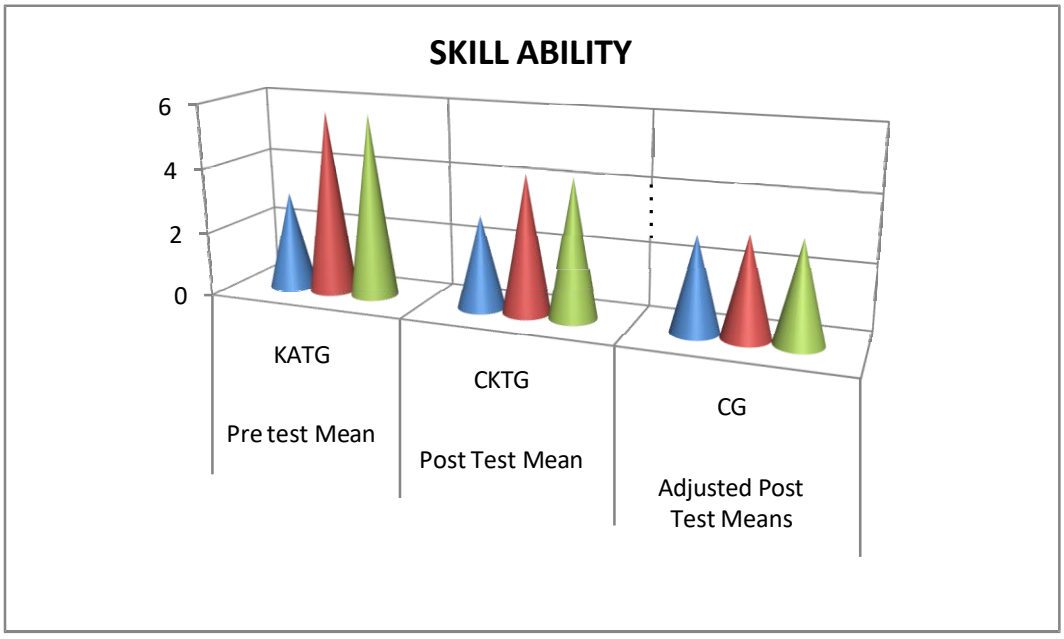
Table IV shows that the adjusted post-test mean differences in defensive skill ability between the Kalari Adimurai training group and the control group are 2.67 and the Kalari Adiurai training group and the Closed Kinetic training group are 1.46. The Closed Kinetic training group and the control group are greater than the confidence interval value of 1.21, which is statistically significant at the .05 level of confidence.

Results

The results of the study showed that both Kalari Adimurai training and Closed Kinetic Chain training had a significant positive effect on agility and defensive skills among inter-collegiate Kabaddi players. However, the group that underwent Kalari Adimurai training showed a greater improvement in agility and defensive skills compared to the CKC training group.

FIGURE - II

GRAPHICAL ILLUSTRATION OF PRE - TEST, POST -TEST AND ADJUSTED POST -TEST MEANS OF EXPERIMENTAL AND CONTROL GROUPS ON SKILL ABILITY



CONCLUSION

In conclusion, both Kalari Adimurai training and Closed Kinetic Chain training are effective methods for improving agility and defensive skills among inter-collegiate Kabaddi players. However, Kalari Adimurai training may be more beneficial for players due to its focus on dynamic movements and body control. Incorporating these training techniques into a Kabaddi player's training regimen can greatly enhance their performance on the court.

REFERENCES

Brini, Seifeddine, et al. "Impact of combined versus single-mode training programs based ondrop jump and specific multidirectional repeated sprint on bio-motor ability adaptations: a parallel study design in professional basketball players." *BMC Sports Science, Medicine andRehabilitation* 14.1 (2022): 160.

Tiru, Mesel. *Effects of Combined Aerobic And Resistance Training on Some Selected Physicalfitness Variables Among Adet Secondary And Preparatory School Male Basketball*.Diss. 2022.

SURESH, D. "Effect Of Treadmill Training On Total Lung Capacity Among Male KabaddiPlayers." *Journal of Namibian Studies: History Politics Culture* 33 (2023): 4232-4236.

SURESH, D. "Effect Of Fartlek And Complex Training On Speed Among Physical Education Students." *Journal Of Xi'an University Of Architecture & Technology Volume Xii, Issue I* (2020).

Suresh, D. "Effect of Fartlek And Complex Training On Endurance Among Physical EducationStudents." *Journal of Xi'an University of Architecture & Technology., ISSN* 1006-7930 (2020).

Suresh, D. "Effect Of Specific Yogic Practice And Resistance Training On Selected PhysicalAnd Psychological Variables Among Male Kabaddi Players." (2017).

SURESH, D. "Effect Of Specific Yogic Practices And Resistance Training On Aggression Among Male Kabaddi Players." *Journal of Namibian Studies: History Politics Culture* 33 (2023):4227-4231.

Drinkwater, Eric J., David B. Pyne, and Michael J. McKenna. "Design and interpretation of anthropometric and fitness testing of basketball players." *Sports medicine* 38 (2008): 565-578.

Korkmaz, Cihat, and Mustafa Karahan. "A comparative study on the physical fitness and performance of male basketball players in different divisions." (2012).