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SPECIAL EFFECTS OF DIVERSE TRAINING ON MOTOR FITNESS VARIABLES IN THE COLLEGE MEN BASKETBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effects of diverse training programs on motor fitness variables in college men's basketball players. To achieve these purposes, identifying thirty intercollegiate competitions at the college level men basketball players were selected at random to study. All the subjects were students of AVVM Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The ages of the subjects ranged between 18 and 23 years. They were simplified into two groups. Each group consists of fifteen players, which was assumed to be appropriate for the purpose of the study. The diverse training for the training group (group I) and the control group (group II), group I, 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 toand after the experimental treatment periods on selected criterion variables related to motor fitness. The following variables, such as speed and strength endurance, were selected as criterion variables: speed was assessed by a 50-meter run (Seconds) and strength endurance was assessed by sit-

ups (numbers/m min). All the subjects in the two 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 between the diverse training group and the control group on criterion variables such as speed, strength endurance.

Keywords: Diverse, training group, the control group , speed , strength, endurance basketball players.

Physical wellness may be a pivotal component of athletic execution, particularly in college basketball players who depend on their engine wellness factors to exceed expectations on the court. The impacts of assorted preparing programs on these factors have been a point of intrigued among coaches and sports researchers. By investigating the effect ofdifferent training methods on dexterity, speed, and control, we will way better get it how to optimize the execution of college men basketball players. This paper will contend that differing preparing programs can upgrade by and large engine wellness factors in college ball players by moving forward their dexterity, speed, and control, eventually driving to way better on-court executionphysical fitness in sports dates back to ancient times, with athletes in various cultures engaging in rigorous training regimens to improve their performance. In the context of basketball, the emphasis on fitness and training has evolved over the years. In the early days of the sport, players relied primarily on natural talent and skill, with little emphasis on physical conditioning. However, as the game became more competitive and demanding, coaches began to recognize the importance of physical fitness in enhancing performance on the court.

Training programs in basketball have become more specialized and focused on improving specific motor fitness variables such as speed, agility, strength, and endurance. With advancements in sports science and technology, coaches have gained a better understanding of the importance of targeted training programs in optimizing athletic performance. Today, college men basketball players are exposed to a variety of diverse training programs designed to improve their motor fitness and overall physical conditioning. Diverse Training Programs:

The impact of diverse training programs on motor fitness variables in college men basketball players cannot be overstated. These programs play a crucial role in enhancing

players' performance on the court and reducing the risk of injury. By targeting specific motor fitness variables such as speed, agility, and endurance, coaches can help players improve their overall athleticism and game skills. Additionally, diverse training programs can help players build strength and stamina, allowing them to withstand the physical demands of a long basketball season.

One of the key benefits of diverse training programs is improved physical conditioning. By incorporating a variety of training modalities such as strength training, agility drills, and cardiovascular exercises, coaches can help players increase their overall fitness levels. This, in turn, can lead to improved performance on the court, as players are better able to handle the demands of a fast-paced game. Furthermore, diverse training programs can help prevent injuries by strengthening the muscles and ligaments that are most susceptible to injury in basketball.

Influential Individuals:

Several influential individuals have made significant contributions to the field of motor fitness training in basketball. One such individual is Dr. Michael Yessis, a sports scientist and author who has conducted extensive research on motor fitness variables in athletes. Dr. Yessis's work has helped coaches and trainers better understand thebiomechanics of athletic movement and develop more effective training programs for basketball players.

Another influential individual in the field is Dr. Jack Daniels, a renowned exercise physiologist and coach who has worked with elite athletes in various sports. Dr. Daniels's research on the physiological demands of basketball has helped coaches design training programs that are tailored to the specific needs of basketball players. His expertise in exercise science has shaped the way coaches approach motor fitness training in basketball.

METHODOLOGY

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

SELECTION OF SUBJECTS

To achieve this purpose of the study was to find out the effects of diverse training programs on motor fitness variables in college men's basketball players. To achieve these purposes, identifying thirty intercollegiate competitions at the college level men basketball players were selected at random to study. All the subjects were students of AVVM Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The ages of the subjects ranged between 18 and 23 years. They were simplified into two groups.

Each group consists of fifteen players, which was assumed to be appropriate for the purpose of the study. The diverse training for the training group (group I) and the control group (group II), group I, 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 testedprior to and after the experimental treatment periods on selected criterion variables related to motor fitness. The following variables, such as speed and strength endurance, were selected as criterion variables: speed was assessed by a 50-meter run (Seconds) and strength endurance was assessed by sit-ups (numbers/m min). All the subjects in the two 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, there were two groups of subjects: experimental group I diverse training group, and control group II without training. The experimental groups were given training programs, whereas the control group was given training programs without any training. The training procedure was conducted for three days per week for twelve weeks in addition to their regular physical education activities. Every day's workout lasted about 45–60 minutes, including warm-up and warm-down exercises. Group II acted as a control group and did not participate in any specific training; however, they participated in a regular physical education program. Thus, the training program was conducted with the following: Dependant Variables Parameters for motor fitness variables were selected, such as speed and strength endurance.

STATISTICAL ANALYSIS

The data was collected from two 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 0.05 level of confidence was utilized to test thesignificance. All these techniques were used with the help of the statistical procedure of thesocial sciences software package version SPSS-21.00.

ANALYSIS OF DATA

The persuasion of the independent variable on each dependent variable was analyzed and presented below:

SPEED

The mean values of the speed of the control group and the diverse training group at different stages of testing have been analyzed and submitted in Table I.

Table - I

ANALYSIS OF COVARIANCE ON SPEED ON PRE TEST AND POST TEST DATA OF EXPERIMENTAL AND CONTROL GROUP

Test	Control Group	Diverse Training Group	Source of Variance	Sum of Square	df	Mean Squares	Obtained 'F' Ratio
Pre- test Mean S.D	7.9207 0.8606	7.9140 0.9375	Between Within	.000 .227	1 28	.000 .008	.041
Post- test Mean S.D	7.9307 0.6508	7.6393 0.1984	Between Within	.637 .610	1 28	.637 .022	29.201*
Adjusted Post- test Mean	7.927	7.643	Between Within	.601 .289	1 27	.601 011	56.278*

**** Significant at 0.05 level of significance.***

(The table value required for significance at 0.05 level of significance with df 1 and 28 and 1 and 27 were 4.196 and 4.210 respectively).

Table – I shows that the pre-test means and S.D on speed of control and diverse training group were 7.9207, 0.8606 and 7.9140, 0.9375 respectively. The obtained 'F' - ratio value of 0.041 for pre-test score on speed was fewer than the required table value of 4.196 was significant with df 1 and 28 at 0.05 level of significance.

The post-test mean values of speed of control and diverse training group were 7.9307, 0.6508 and 7.6393, 0.1984 respectively. The obtained 'F' - ratio value of 29.201 for post test scores was significant than the table value of 4.196 for connotation with df 1 and

28.

The adjusted post-test mean values of control and diverse training group were 7.927 and 7.643. The obtained 'F' - ratio proportion of 56.278 was significant than the required table value of 4.210.

The above statistical analysis indicates that there was a significant improvement in performance of speed after the training periods. Further the adjusted post-test mean values on speed of control and diverse training group were graphically represented in figure - I.

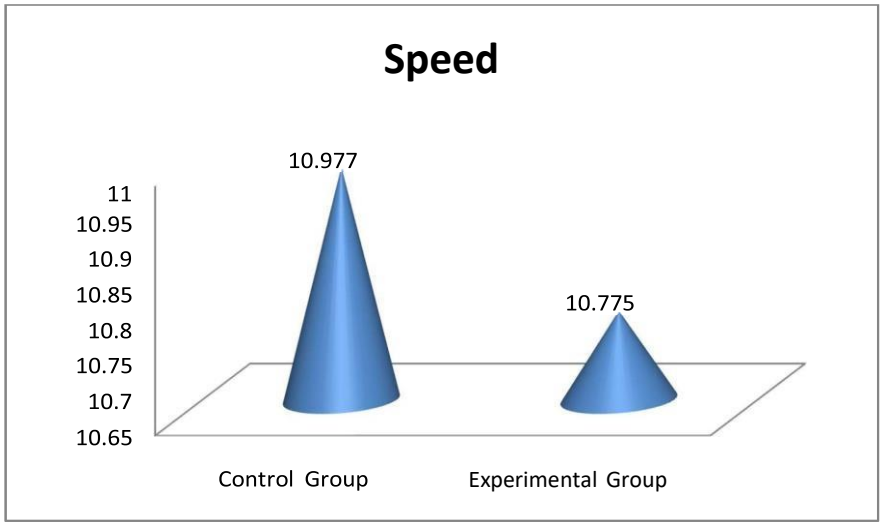

Figure-I: Adjusted post-test mean values on speed of control and diverse training group

STRENGTH ENDURANCE

The mean values of strength endurance of control group and diverse training group at different stages of tests have been analyzed and submitted in table – II.

TABLE - II

ANALYSIS OF COVARIANCE ON STRENGTH ENDURANCE ON PRE TEST AND POST TEST DATA OF EXPERIMENTAL AND CONTROL GROUP

Test	Control Group	Diverse Training Group	Source of Variance	Sum of Square	df	Mean Squares	Obtained 'F' Ratio
Pre- test Mean S.D	37.4667 1.88478	38.4000 1.95667	Between Within	6.533 3.333	1 28	6.533 3.690	1.770
Post- test Mean S.D	38.4667 1.76743	41.4000 1.63881	Between Within	64.533 81.333	1 28	64.533 2.905	22.216*
Adjusted Post- test Mean	38.522	41.344	Between Within	56.173 79.861	1 27	56.173 2.958	18.991*

** Significant at 0.05 level of significance.*

(The table value required for significance at 0.05 level of significance with df 1 and 28 and 1and 27 were 4.196 and 4.210 respectively).

Table – II shows that the pre-test means and S.D on strength endurance of control and Diverse Training group were 37.4667 ± 1.88478 and 38.400 ± 1.95667 respectively. The obtained 'F' - ratio value of 1.770 for pre-test score on strength endurance was fewer than the required table value of 4.196 was significant with df 1 and 28 at 0.05 level of significance.

The post-test mean values of strength endurance of control and diverse training group were 38.4667 ± 1.76743 and 41.4000 ± 1.63881 respectively. The obtained 'F' - ratio value of 22.216 for post test scores was significant than the table value of 4.196 for connotation with df 1 and 28.

The adjusted post-test mean values of control and diverse training group were 38.522 and 41.344. The obtained 'F' - ratios proportion of 18.991 was significant than the required table value of 4.210.

The above statistical analysis indicates that there was a significant improvement in performance of strength endurance after the training periods. Further the adjusted post-test mean values on strength endurance of control and diverse training group were graphically

represented in figure – II.

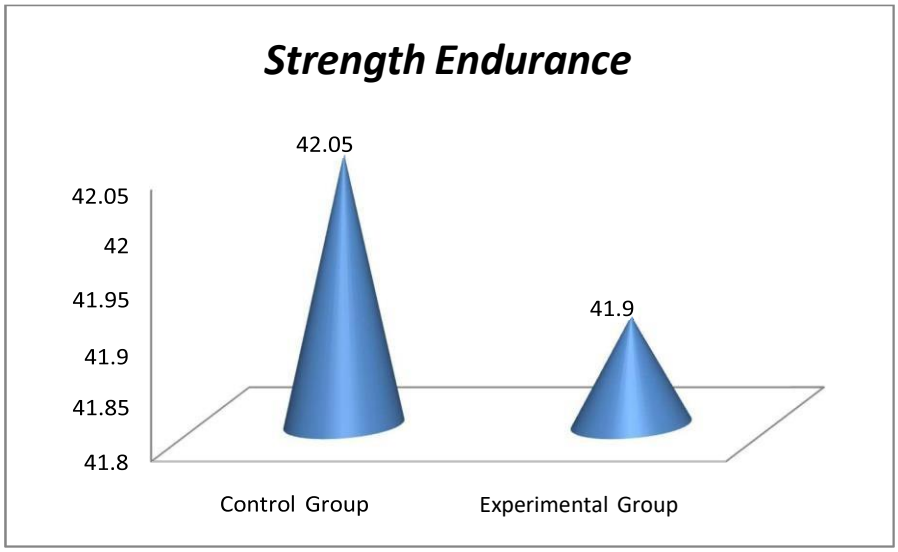

Figure-II: Adjusted post-test mean values on strength endurance of control and diverse training

CONCLUSIONS

From the findings of the study, the following conclusions were derived:

1. The result shows that there was a significant improvement in speed for diverse training group as compared to control group.
2. There was a significant increase in strength endurance for diverse training group as compared to control group.
3. Incorporating diverse training programs is essential for college men basketball players to improve their motor fitness variables and enhance their overall performance on the court. By focusing on speed strength endurance players can elevate their game to the next level and achieve success in their athletic endeavors.

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INFLUENCE OF BALLISTIC TRAINING ON VERTICAL JUMP BY THE COLLEGE MALE BASKETBALL PLAYERS

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Abstract

The purpose of the present study was to investigate the impact of ballistic training on vertical jump performance in college male basketball players. To achieve the purpose of the study, thirty male basketball players were selected at random to study. All the subjects were students of Avvm Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. The selected players were divided into two equal groups, consisting of 15 male basketball players. The ballistic training group (group I) and the control group (group 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 vertical jumps, which were taken as criterion variables in this study. The following variables, such as vertical jump, were selected as criterion variables: A vertical jump was assessed by a wall- mounted vertical jump test. All the subjects in the two groups were tested on selected criterion variables prior to and immediately after the training program, as pre- and post-tests were taken before the training period and post-tests were measured immediately after the twelve-week training period. The statistical technique't' ratio

was used to analyze the means of the pre-test and post-test data of the experimental group and control group. The results revealed that there was a significant difference in the criterion variable. The difference is due to the Ballistic Training given to the experimental group on vertical jump when compared to the control group.

Keywords: Ballistic Training, vertical jump and‘t’ ratio.

INTRODUCTION

In the realm of college basketball, the pursuit of enhanced athletic performance is a constant endeavor. Coaches and players alike are always seeking innovative methods to boost their skills on the court. One such method that has gained traction in recent years is ballistic training. This specialized form of training focuses on explosive movements to improve power and performance. Specifically, many college male basketball players have turned to ballistic training to enhance their vertical jump ability, a crucial skill in the game of basketball.

Ballistic Training

Ballistic training is rooted in the concept of explosiveness. It involves rapid, high- force movements that engage the fast-twitch muscle fibers in the body. By performing exercises such as jump squats, power cleans, and medicine ball throws with maximal speed and effort, athletes can develop greater power output. This newfound power translates directly to improved performance on the basketball court, particularly in areas like vertical jumping.

Vertical Jump Performance

The ability to jump high is a fundamental skill for basketball players, allowing them to both score points and defend against opponents effectively. Through consistent ballistic training, college male basketball players can experience significant enhancements in their vertical jump height. By targeting the explosive strength needed for quick and powerful jumps, athletes can elevate their performance to new heights, quite literally.

Scientific Backing

Research studies have delved into the impact of ballistic training on vertical jump performance in athletes. These studies have consistently shown positive results, with participants displaying notable improvements in jump height and power output after engaging in ballistic training regimens. The science behind this training method aligns with the principles of biomechanics and muscle physiology, making it a credible and effective approach for enhancing athletic performance.

For college male basketball players looking to up their game, integrating ballistic training into their workout routines can be a game-changer. By incorporating explosive exercises that mimic the demands of the sport, players can strengthen the specific muscle groups involved in vertical jumping. Over time, this targeted training can lead to measurable

improvements in jump height and overall performance on the court.

METHODOLOGY

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

SELECTION OF SUBJECTS

To achieve this purpose of the present study was to investigate the impact of ballistic training on vertical jump performance in college male basketball players. To achieve the purpose of the study, thirty male basketball players were selected at random to study. All the subjects were students of Avvm Sri Pushpam Arts and Science College (Autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. The selected players were divided into two equal groups, consisting of 15 male basketball players. The ballistic training group (group I) and the control group (group 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 toand after the experimental treatment periods on selected vertical jumps, which were taken as criterion variables in this study. The following variables, such as vertical jump, were selected as criterion variables: A vertical jump was assessed by a wall-mounted vertical jump test. All the subjects in the two groups were tested on selected criterion variables prior to and immediately after the training program, as pre- and post-tests were taken before the training period and post-tests were measured immediately after the twelve-week training period. The‘t’ test was used to analysis the significant differences, if any, in between the groups respectively. The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

TRAINING PROGRAMME

During the training period, there were two groups of subjects: experimental group I ballistic training group and control group II without training. The experimental groups were given training programs, whereas the control group was given training programs without any training. The training procedure was conducted for three days per week for twelve weeks in addition to their regular physical education activities. Every day's workout lasted about 45–60 minutes, including warm-up and warm-down exercises. Group II acted as a control group and did not participate in any specific training; however, they participated in a regular physical

education program. Thus, the training program was conducted with the following: Dependant Variables Parameters for physical fitness variables were selected, such as vertical jump.

ANALYSIS OF THE DATA

The significance of the difference among the means of the experimental group was found out by pre-test. The data were analysed and dependent‘t’ test was used with 0.05 levels as confidence.

Table 1:

ANALYSIS OF T-RATIO FOR THE PRE AND POSTTESTS OF EXPERIMENTAL AND CONTROL GROUP ON VERTICAL JUMP

Variables	Group	Mean		SD		SD Error		D f	‘t’ ratio
		Pre	Post	Pre	Post	Pre	Post		
Vertical jump	Control	42.05	41.90	0.63	0.77	0.16	0.19	14	0.66
	Experimental	41.95	43.89	0.75	0.86	0.19	0.22		7.17*

Significance at.05 level of confidence.

Table I reveal that the mean values of the pre-test and post-test of the control group on vertical jump were 42.05 and 41.90, respectively. The obtained ‘t’ ratio was 0.66, and since the obtained ‘t’ ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom, it was found to be statistically insignificant. The mean values of the pre-test and post-test of the experimental group on vertical jump were 41.95 and43.89, respectively. The obtained ‘t’ ratio was 7.17*. Since the obtained ‘t’ ratio was greater than the required table value of 2.14 for significance at the 0.05 level with 14 degrees of freedom, it was found to be statistically significant. The result of the study showed that there was a significant difference between the control group and the experimental group in vertical jump. It may be concluded from the result of the study that the experimental group improved in vertical jumps due to twelve weeks of ballistic training.

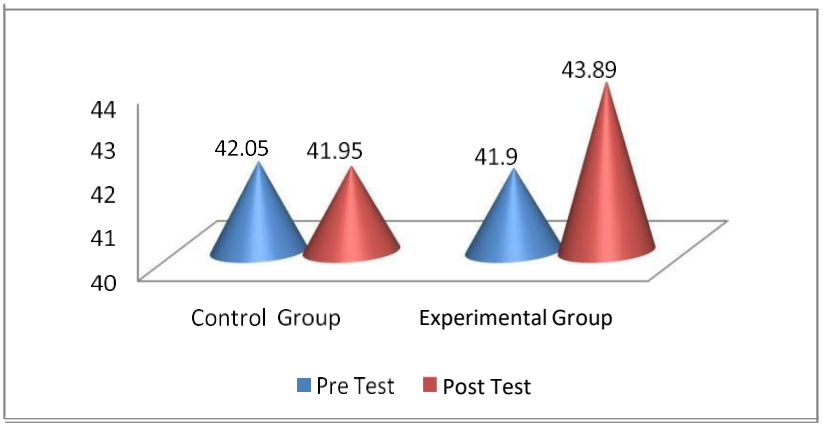

Fig 1: *Bar diagram showing the pre and post mean values of experimental and control group on Vertical jump*

DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, namely the ballistic training group, significantly improved the selected dependent variable, namely vertical jump, when compared to the control group. It is also found that the improvement was caused by maximal power training when compared to the control group.

CONCLUSIONS

1. There was a significant difference between the experimental and control groups on the vertical jump after the training period.
2. There was a significant improvement in the vertical jump. However, the improvement was in favor of the experimental group due to twelve weeks of ballistic training.
3. In conclusion, the impact of ballistic training on vertical jump performance in college male basketball players is undeniable. Through its focus on explosive movements and power development, ballistic training offers athletes a proven pathway to enhancing their athletic abilities. By embracing this specialized training approach, players can soar to newheights on the basketball court, both figuratively and literally.

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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)

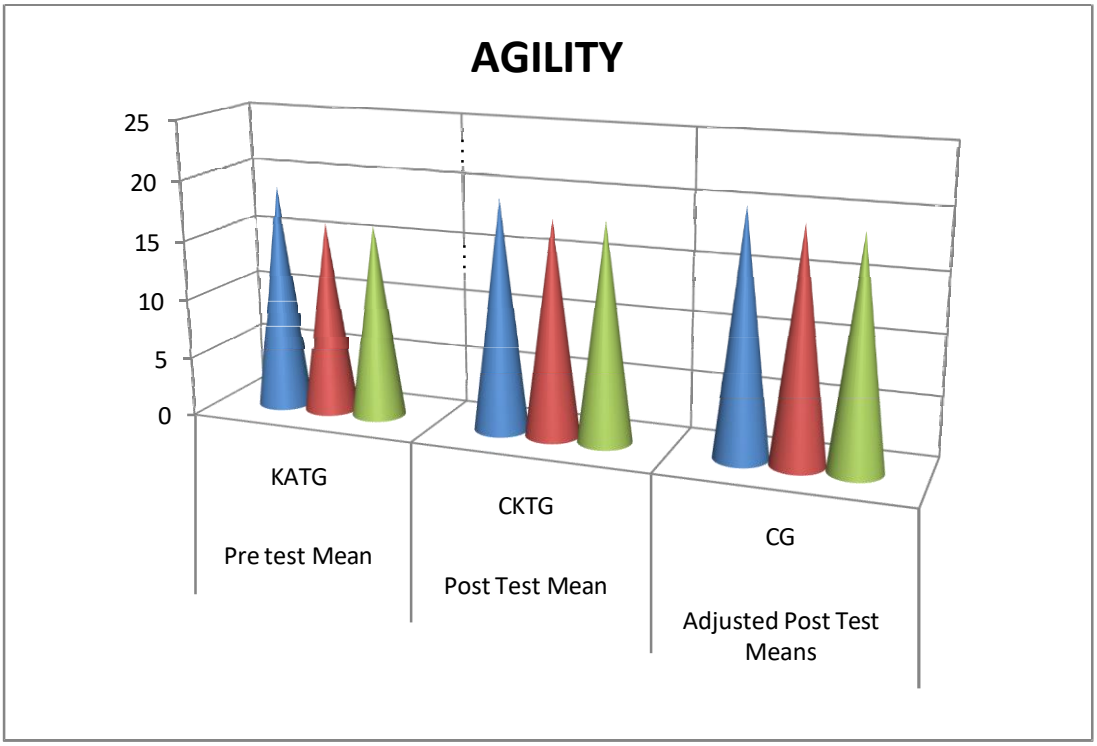


TABLE - III

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

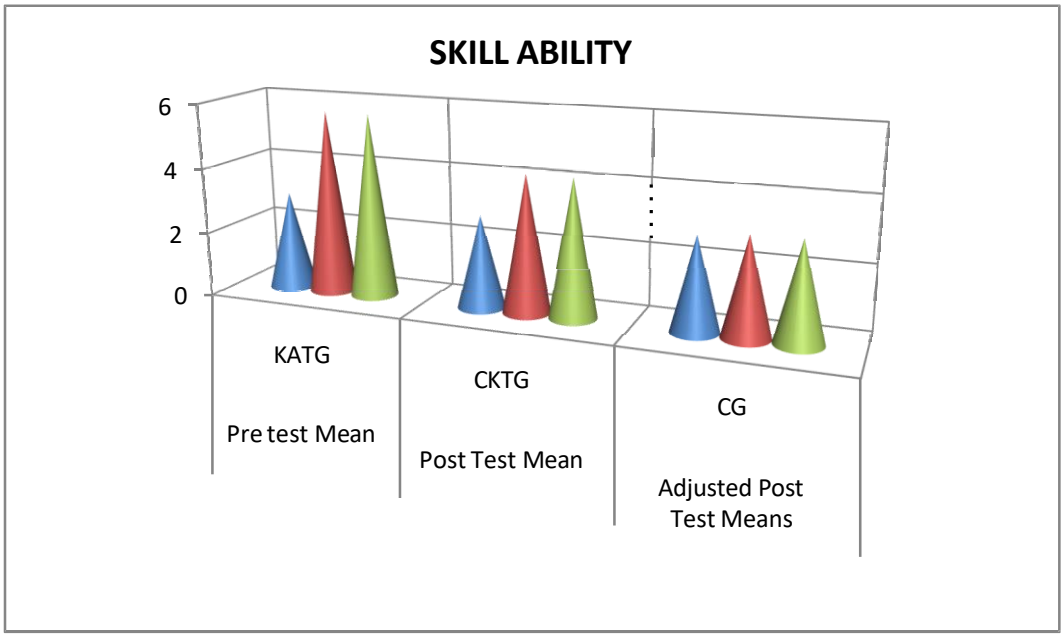
Table IV shows that the adjusted post-test mean differences in defensive skill ability between the Kalari Adimurai training group and the control group are 2.67 and the Kalari Adiurai training group and the Closed Kinetic training group are 1.46. The Closed Kinetic training group and the control group 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.

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INFLUENCE OF A PLYOMETRIC EXERCISE PROGRAM AND HIGH-INTENSITY INTERVAL EXERCISE PROGRAM ON BASKETBALL PLAYING ABILITY

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ABSTRACT

The purpose of the study was to find out the influence of a plyometric exercise program and a high-intensity interval exercise program on basketball playing ability. To achieve the purpose of the study, ninety male basketball players were selected at random to study. All the subjects were students of Avvm Sri Pushpam Arts and Science College (autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. They were divided into three equal groups of thirty players. The plyometric exercise training group (group I), the high-intensity interval training group (group I), 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 variables, such as explosive strength and speed endurance, were selected as criterion variables: explosive strength was assessed by a medicine ball throw (maximum distance), and speed endurance was assessed by a 1500-meter run. 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 between the plyometric exercise training group, the high-intensity interval training group, and the control group on criterion variables such as explosive strength and speed endurance.

Keywords: *Plyometric exercise training group, the high-intensity interval training group, and the control group on criterion variables among explosive strength and speed endurance for the basket ball players*

INTRODUCTION

Basketball is a fast-paced and physically demanding sport that requires explosive power, agility, and endurance. As such, it is important for basketball players to engage in exercise programs that can enhance their performance on the court. The influence of a plyometric exercise program and a moderate-intensity exercise program on basketball playing ability is a topic of interest for coaches, athletes, and researchers alike. Plyometric exercises focus on explosive movements to improve power and agility, while moderate-intensity exercises aim to enhance endurance and overall fitness. This essay will explore the potential impact of these two exercise programs on basketball playing ability, and argue that a combination of both programs may be the most effective approach for improving performance on the court.

Basketball is a dynamic and physically demanding sport that requires athletes to possess explosive power, agility, and endurance. In order to enhance their performance on the court, basketball players often turn to specific training programs to improve their athletic abilities. The influence of a plyometric exercise program and a high-intensity interval exercise program on basketball playing ability has been a topic of growing interest among researchers and coaches. These training programs are designed to target different aspects of athletic performance, and understanding their impact on basketball playing ability can provide valuable insights for players and coaches seeking to optimize their training regimens. This essay will analyze the potential benefits of plyometric and high-intensity interval training for basketball players and argue for their positive influence on overall performance on the court.

Plyometric and high-intensity interval (HIIT) exercises are popular methods of training that have been used to improve physical performance in many sports, including basketball. This article will explore the impact of a plyometric exercise program and a HIIT exercise program on basketball playing ability. It will evaluate the effectiveness of each program, examining the improvements in vertical jump height, agility, speed, and other skills that are important for basketball performance. Additionally, the article will consider the safety of each program to understand how these exercises might affect an athlete's overall health. Finally, the article will

discuss the practical implications of plyometric and HIIT training for basketball players, coaches, and trainers.

Plyometric Exercise Programs

Plyometric exercises involve rapid stretching and contracting of muscles, aiming to improve muscle power and explosiveness. These exercises typically include jumping, hopping, and bounding movements, focusing on enhancing an athlete's ability to generate force quickly. When integrated into a basketball training regimen, plyometric exercise programs can contribute to improved vertical jump, agility, and overall lower body strength, enabling players to execute quick and powerful movements on the court.

High-Intensity Interval Exercise Programs

High-intensity interval exercise programs emphasize short bursts of intense activity followed by brief periods of rest or lower-intensity exercise. By pushing the body to its limits during intense intervals, athletes can improve their cardiovascular endurance, speed, and recovery. For basketball players, the incorporation of high-intensity interval training can lead to enhanced stamina, faster sprinting capabilities, and improved ability to maintain peak performance throughout the game.

Impact on Basketball Playing Ability

When evaluating the influence of plyometric and high-intensity interval exercise programs on basketball playing ability, it becomes evident that these training methodologies offer several advantages. Plyometric exercises can contribute to increased vertical jump height, faster acceleration, and improved agility, allowing players to maneuver on the court with greater speed and precision. Conversely, high-intensity interval training can enhance overall cardiovascular fitness, enabling basketball players to sustain high energy levels throughout the game and recover more efficiently between plays.

Synergistic Effects and Performance Enhancement

The combination of plyometric and high-intensity interval exercise programs presents a synergistic opportunity for basketball players to elevate their performance. By integrating these training modalities, athletes can experience comprehensive improvements in their athletic abilities, including heightened explosiveness, enhanced endurance, and superior agility. This synergistic approach addresses multiple facets of basketball playing ability, creating a well- rounded impact on the overall performance of players on the court.

METHODOLOGY

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

SELECTION OF SUBJECTS

To achieve the purpose of the study was to find out the influence of a plyometric exercise program and a high-intensity interval exercise program on basketball playing ability. To achieve the purpose of the study, ninety male basketball players were selected at random to study. All the subjects were students of Avvm. Sri Pushpam Arts and Science College (autonomous), Poondi, Tanjavur, Tamil Nadu, India. The age of the subjects ranged between 18 and 23 years. They were divided into three equal groups of thirty players. The plyometric exercise training group (group I), the high-intensity interval training group (group I), 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 variables, such as explosive strength and speed endurance, were selected as criterion variables: explosive strength was assessed by a medicine ball throw (maximum distance), and speed endurance was assessed by a 1500-meter run. 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, there were three groups of subjects: experimental group I plyometric exercise training, experimental group II high-intensity interval training and control group III without training. The experimental groups were given training programs, whereas the control group was given training programs without any training. The training procedure was conducted for three days per week for twelve weeks in addition to their regular physical education activities. 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. Thus, the training program was conducted with the following: Dependant Variables Parameters for motor fitness variables were selected, such as explosive strength and speed endurance.

STATISTICAL ANALYSIS

The data was collected from four 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 0.05 level of confidence was utilized to test the significance. All these techniques were used with the help of the statistical procedure of the social sciences software package version SPSS-21.00.

ANALYSIS OF DATA

The analysis of covariance of the data obtained for explosive strength of the pre-test and post-test of the plyometric exercise training group, high-intensity interval training group and Control group has been presented in Table I.

TABLE -I
ANALYSIS OF COVARIANCE FOR EXPLOSIVE STRENGTH ON PRE TEST AND POST TEST DATA OF EXPERIMENTAL AND CONTROL GROUPS

Test	Plyometric training group	High-intensity interval training	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F ratio
Pre-test Means	64.767	64.333	65.100	Between Within	8.867 3828.733	2 87	4.433 44.008	0.101
Post-test Means	66.367	71.233	64.967	Between Within	649.156 955.300	2 87	324.578 22.475	14.442*
Adjusted post-test Means	66.349	71.448	64.770	Between Within	729.173 856.250	2 86	364.587 9.956	36.618*

**Significant at 0.05 level of confidence. Table value required for F ratio for df 2 to 87 is 3.10 and 2 to86 is 3.10.*

Table -I shows that the pre-test mean values on explosive strength of plyometric exercise training group, high-intensity interval training group, and control group are 64.767, 64.333, and 65.100, respectively. The obtained 'f' ratio of 0.101pre-test score was less than the required table value of 3.10 for df 2 and 87 for significance at the 0.05 level of confidence on explosive strength. The post-test mean values on explosive strength of plyometric exercise training group, high-intensity interval training group, and control group are 66.367, 71.233, and 64.967, respectively. The obtained 'f' ratio value of 14.442for the post-test score was greater than the required table value of 3.10 for the df 2 and 87 for significance at the .05 level of confidence on explosive strength.

The adjusted post-test mean values for the explosive strength of s plyometric exercise training group, high-intensity interval training group, and control group are 66.349, 71.448, and 64.770, respectively. The obtained 'F' ratio value of 36.618 for the adjusted post-test score was

greater than the required table value of 3.10 for DF 2 and 86 for the significance at the .05 level of confidence on explosive strength.

The results of the study indicated that there was a significant difference between the adjusted post-test mean of plyometric exercise training group, the high-intensity interval training group, and the control group on explosive strength.

TABLE-II

SCHEFFES POST-HOC TEST FOR MEAN DIFFERENCE BETWEEN GROUPS ON EXPLOSIVE STRENGTH

Plyometric training group	High-intensity interval training	Control group	Difference between means	Critical differences for adjusted mean
66.349	71.448	5.099*	5.099*	1.713
66.349	64.770	1.579	1.579	1.713
71.448	64.770	6.678*	6.678*	1.713

* Significant at 0.05 level

From Table II, it was imperative that both the plyometric exercise training group and the high-intensity interval training group differ significantly from the control group in terms of explosive strength. Insignificant differences were found between plyometric exercise training group and the high-intensity interval training group in improving the explosive strength of basketball players. Therefore, twelve weeks of plyometric exercise training group showed greater improvement than high-intensity interval training group on the explosive strength of basketball players. The findings of the study imply that both groups improved, but plyometric exercise training group was significantly better at improving explosive strength than other groups confined to this study.

The findings of the study imply that both groups improved, but s high-intensity interval training group was significantly better at improving explosive strength than other groups confined to this study.

TABLE -III

ANALYSIS OF COVARIANCE FOR SPEED ENDURANCE ON PRE TEST AND POST TEST DATA OFEXPERIMENTAL AND CONTROL GROUPS

(1500m run)

Test	Plyometric training group	High-intensity interval training	Control group	Source of Variance	Sum of squares	df	Mean square	F ratio
Pre-test means	51.600	51.600	52.000	Between Within	3.200 150.400	2 87	1.600 1.729	0.926
Post-test means	50.100	41.867	51.933	Between Within	1724.867 244.033	2 87	862.433 2.805	307.465*
Adjusted post-test means	49.958	41.871	51.872	Between Within	36.869 42.913	2 86	18.435 0.449	36.943*

**Significant at 0.05 level of confidence. Table value required for F ratio for df 2 to 87 is 3.10 and 2 to*86 is 3.10.

Table III shows that the pre-test mean values on speed endurance of the plyometric exercise training group, high-intensity interval training group and control group are 51.600, 51.600, and 52.000, respectively. The obtained 'F' ratio of 0.926 pre-test score was less than the required table value of 3.10 for DF 2 and 87 for significance at the .05 level of confidence on speed endurance. The post-test mean values on speed endurance of the s plyometric exercise training group, high-intensity interval training group, and control group are 50.100, 41.867, and 51.933, respectively. The obtained 'F' ratio value of 307.465 for the post-test score was greater than the required table value of 3.10 for the DF 2 and 87 for significance at the .05 level of confidence on speed endurance.

The adjusted post-test mean values on speed endurance of the plyometric exercise training group, high-intensity interval training group and control group are 49.958, 41.871, and 51.872, respectively. The obtained 'F' ratio value of 36.943 for the adjusted post-test score was greater than the required table value of 3.10 for DF 2 and 86 for the significance at the .05 level of confidence on speed endurance.

The results of the study indicated that there was a significant difference among the adjusted post-test mean of plyometric exercise training group, high-intensity interval training group and control group on speed endurance.

TABLE-IV

SCHEFFES POST-HOC TEST FOR MEAN DIFFERENCE BETWEEN GROUPS ON SPEED ENDURANCE

Plyometric group	High-intensity interval training	Control Group	Difference between means	Critical differences for adjusted mean

49.958	41.871	8.087*	4.339	
49.958	51.872	1.914	4.339	
41.871	51.872	10.001*	4.339	

* Significant at 0.05 level of confidence

From Table IV, it was imperative that both the plyometric exercise training group and the high-intensity interval training group differ significantly from the control group in terms of speed endurance. Insignificant differences were found between plyometric exercise training group and the high-intensity interval training group in improving the speed endurance of basketball players. Therefore, twelve weeks of plyometric exercise training group showed greater improvement than high-intensity interval training group on the speed endurance of basketball players. The findings of the study imply that both groups improved, but plyometric exercise training group was significantly better at improving speed endurance than other groups confined to this study.

The findings of the study imply that both groups improved, but s high-intensity interval training group was significantly better at improving speed endurance than other groups confined to this study.

CONCLUSIONS

Based on the research findings, the following conclusions were drawn for the present study following conclusions may be drawn:

In conclusion, the influence of plyometric exercise programs and high-intensity interval exercise programs on basketball playing ability is substantial. The integration of these training methodologies can lead to remarkable enhancements in vertical jump, agility, speed, endurance, and overall physical prowess, equipping basketball players with the necessary skills to excel in their sport. As athletes continue to explore innovative approaches to training, the combination of plyometric and high-intensity interval exercise programs stands out as a promising avenue for optimizing basketball performance.

1. It was concluded that plyometic exercises and high-intensity interval training significantly improved the explosive strength and speed endurance of the basketball players playing abilities.
2. It was concluded that plyometic exercises were better than high-intensity interval training at improving explosive strength among basketball players playing ability.
3. It was concluded that high-intensity interval training and plyometic exercises significantly improved the basketball players playing ability.

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IMPACT OF DIFFERENT PACKAGES OF TRAINING PROGRAMS ON ANTHROPOMETRIC AND PHYSIOLOGICAL VARIABLES IN YOUNG CURIOUS VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the impact of different packages of training programs on anthropometric and physiological variables in young, curious volleyball players. To achieve this purpose of the study, sixty male volleyball 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 four equal groups of fifteenplayers: the circuit training group (Group I), the plyometric training group (Group II), the SAQ training group (Group III), and the control group (Group IV). Groups I and III 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 experimentaltreatment periods on selected criterion variables related to physical fitness. The followingvariables, such as arm girth and breath holding Time, were selected as criterion variables: Arm girth was assessed by a measuring tape (in centimeters), and breath holding Time was assessed by a Nose clip method (In seconds). 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. Ananalysis 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 between the circuit training group, plyometric training group, SAQ training group, and the control group on criterion variables such as arm girth and breath holding Time.

Keywords: *circuit training group, plyometric training group, SAQ training group and the control group on criterion variables among arm girth and breath holding Time for the volleyballplayers.*

Circuit Training

Circuit training involves performing a series of exercises in a specific order with minimal rest in between. This form of training has been found to have a positive impact on the anthropometric and physiological variables of young volleyball players. It helps in improving muscular strength, endurance, and cardiovascular fitness. Additionally, circuit training contributes to the reduction of body fat percentage and the development of lean muscle mass, which are crucial for optimal performance on the volleyball court.

Plyometric Training

Plyometric training focuses on explosive movements aimed at enhancing power and speed. It involves exercises such as jumps, hops, and bounds. When incorporated into the training regimen of young volleyball players, plyometric training has been shown to improve lower body strength, agility, and vertical jump height. These enhancements are essential for spiking, blocking, and overall agility on the volleyball court.

SAQ Training

Speed, agility, and quickness (SAQ) training programs are designed to enhance an athlete's ability to move quickly and efficiently in multi-directional patterns. For young volleyball players, SAQ training contributes to improved footwork, reaction time, and change of direction capabilities. These attributes are crucial for maneuvering around the court, positioning for serves, and responding to opponents' movements effectively.

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 impact of different packages of training programs on anthropometric and physiological variables in young, curious volleyball players. To

achieve this purpose of the study, sixty male volleyball 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 four equal groups of fifteen players: the circuit training group (Group I), the plyometric training group (Group II), the SAQ training group (Group III), and the control group (Group IV). Groups I and III 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 variables, such as arm girth and breath holding Time, were selected as criterion variables: Arm girth was assessed by a measuring tape (in centimeters), and breath holding Time was assessed by a Nose clip method (In seconds). 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

The subjects (volleyball players) were comprised during the training period, there were four groups: experimental group I (circuit training), experimental group II (plyometric training), experimental group III (SAQ training), and control group IV (without training). The experimental groups were given training programs, whereas the control group was given trainingprograms without any training. The training procedure was conducted for three days per weekfor twelve weeks in addition to their regular physical education activities. 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. Thus, the training program was conducted with the following instruments: anthropometric and physiological variables selected, such as arm girth and breath holding time.

STATISTICAL ANALYSIS

The data was collected from four 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. All these techniques were used with the help of the statistical procedure of the social sciences software (SPSS-20).

ANALYSIS OF DATA

The analysis of covariance of the data obtained for Arm Girth of the pre-test and post-test of the Circuit training group, plyometric training group, SAQ training group and Control group has been presented in Table I.

Table-I

COMPUTATION OF ANALYSIS OF COVARIANCE FOR ARM GIRTH ON PRE-TEST AND POST-TEST DATA OF EXPERIMENTAL AND CONTROL GROUPS

(In Centimetres)

Test	SAQ Training Group	Plyometric Training Group	Circuit Training Group	Control group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test									
Mean	26.70	26.93	26.53	26.73	Between	1.21	3	.404	.059
S.D.	3.44	2.51	2.14	2.15	Within	383.50	56	6.84	
Post Test									
Mean	26.96	27.26	27.00	26.86	Between	1.31	3	.437	.065
S.D.	3.52	2.47	2.05	2.03	Within	376.40	56	6.72	
Adjusted Post Test									
2.36 Mean	26.99	27.06	27.18	26.85	Between	.853	3	.284	2.36
					Within	6.60	55	.120	

* Significant at 0.05 level
Required Table value for df (3&55 and 3&56) at 0.05 level = 2.77

Table I revealed the arm girth of the pre-test and post-test group of the experimental and control groups. In this context, the mean value observed for the SAQ group was (M = 26.70, SD = 3.44), the plyometric group (M = 26.93, SD = 2.51), the circuit group (M = 26.53, SD = 2.14), and the control group (M = 26.73, SD = 2.15) with reference to arm girth among them. The analysis of covariance observed that there was no significant difference in the pre-test score between the control and experimental groups. The F-value was identified as F (3, 56) =.059, showing an insignificant difference among them.

The mean value of the arm girth of the post-test group of experimental and control group was observed to be (M = 26.96, SD = 3.52), the plyometric group (M = 27.26, SD = 2.47), the circuit group (M = 27.00, SD = 2.05), and the control group (M = 26.86, SD = 2.03), with reference to the arm girth among them. The analysis of covariance observed that there was no significant difference in post-test score between the control and experimental groups. The F- value was identified as F (3, 56) =.065, showing an insignificant difference among them.

The mean value of Arm Girth of adjusted post-test groups of experimental and control groups, the mean value observed that the SAQ group was (M= 26.99), Plyometric group (M= 27.06), Circuit group (M= 27.18) and Control group (M=26.85) with reference to Arm Girth among them. The analysis of covariance observed that there was no significant difference in the adjusted post-test score between the control and experimental groups. The F-value was identified as F (3, 56) = 2.36, showing an insignificant difference among them.

Table-II

COMPUTATION OF ANALYSIS OF COVARIANCE FOR BREATH HOLDING TIME ON PRE-TEST AND POST-TEST DATA OF EXPERIMENTAL AND CONTROL GROUPS

(In seconds)

Test	SAQ Training Group	Plyometric Training Group	Circuit Training Group	Control group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test									
Mean	23.93	23.66	23.26	24.20	Between	7.13	3	2.37	1.67
S.D.	.798	1.23	1.22	1.42	Within	79.60	56	1.42	
Post Test									
Mean	28.13	27.06	26.40	24.13	Between	128.73	3	42.91	18.77*
S.D.	1.18	1.43	1.88	1.45	Within	128.00	56	2.28	
Adjusted Post Test									
2.36 Mean	27.97	27.16	26.87	23.72	Between	152.95	3	50.98	49.67*
					Within	56.45	55	1.02	

* Significant at 0.05 level

Required Table value for df (3&55 and 3&56) at 0.05 level = 2.**77**

Table II revealed the breath holding times of the pre-test and post-test groups of the experimental and control groups. In this context, the mean value observed for the SAQ group was (M = 23.93, SD =.798), the plyometric group (M = 23.66, SD = 1.23), the circuit group (M = 23.26, SD = 1.22), and the control group (M = 24.20, SD = 1.42), with reference to breath holding time among them. The analysis of covariance observed that there was no significant difference in the pre-test score between the control and experimental groups. The F-value was identified as F (3, 56) = 1.67, showing an insignificant difference among them.

The mean value of breath holding time in the post-test group of experimental and control groups was observed to be (M = 28.13, SD = 1.18), plyometric group (M = 27.06, SD = 1.43), circuit group (M = 26.40, SD = 1.88) and control group (M = 24.13, SD = 1.45) with reference to breath holding time among them. The analysis of covariance observed that there was a significant difference in post-test scores between the control and experimental groups. The F- value was identified as F (3, 56) = 18.77, showing a significant difference among them.

The mean value of breath holding time of adjusted post-test groups of experimental and control groups was observed to be (M = 27.97), (Plyometric group = 27.16), (Circuit group = 26.87), and (Control group = 23.72) with reference to breath holding time among them. The analysis of covariance observed that there was a significant difference in the adjusted post-test score between the control and experimental groups. The F-value was identified as F (3, 56) = 49.67, showing a significant difference among them.

TABLE - III

SCHEFFES POST-HOC TEST FOR MEAN DIFFERENCE BETWEEN GROUPS ON BREATH HOLDING TIME

(In Seconds)

SAQ **Training Group**	**Plyometric Training Group**	**Circuit Training Group**	**Control group**	**Mean Differences**	**Confidence Interval Value**
27.97	27.16		-	0.81	
27.97	-	26.87	-	1.1*	
27.97	27.16		23.72	4.25*	
-	27.16	26.87		0.29	1.04
-			23.72	3.44*	
-	-	26.87	23.72	3.15*	

**Significant at 0.05 level of confidence.*

Table III indicates a post-hoc test (Scheffe's method) between the control group and the three experimental groups. The post-hoc test was used to identify the significant difference in breath holding time among groups. The mean value of the respective groups‟ portrayed target score of breath holding time to find out significance differences between them. The adjusted post-mean score of breath holding time indicates the magnitude of breath holding time efficiency between groups. The results found that the mean difference was significant at the 0.05 level between the SAQ and control groups (MD = 4.25, p> 0.05), the plyometric and control groups (MD = 3.44, p> 0.05), and the circuit and control groups (MD = 3.15, p> 0.05). The results also portrayed that the significant mean difference between SAQ and the circuit group (MD = 1.1, p> 0.05) was at the 0.05 level with regard to breath holding time. In this context, the study indicates that there was no significant difference between the groups of SAQ and plyometric and the groups of plyometric and circuit.

CONCLUSIONS

Based on the results of the study the following conclusion where drawn:

1. The SAQ training, plyometric training, and circuit training had not showed any significant changes in anthropometric variables, namely arm girth, when compared with the control group
2. The SAQ training, plyometric training, and circuit training had showed significant improvement in physiological variables such as breath holding when compared with the control group.
3. The SAQ training was better than the circuit training in the improvement breathes holding time.
4. It was concluded that there was no significant difference among the three experimental groups on selected anthropometric variables, namely arm girth.

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IMPORTANCE OF PHYSICAL EDUCATION AND SPORTS EDUCATION FOR RECENT DAYS IN STRESSFUL LIFE STYLE IN THE MODERN SOCIETY

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ABSTRACT

Research has demonstrated that engagement in physical education, physical activity, and sports positively affects adolescent feelings of connectedness to their college, aspirations, the prevalence of positive social behaviors in colleges, and the development of leadership and citizenship skills. Physical education and college sport programs should be creative, involve the entire college in daily or weekly activity programs, and most importantly be fully integrated within a multifaceted college aim of enhancing attendance, raising attainment, and altering attitudes toward learning in order to have an impact on whole college attendance. Young people who play organized sports exhibit reduced rates of antisocial behavior, which could lead to a decrease in college dropout rates. Anxiety, depression, mood, and overall wellness are all improved by physical activity, and these factors may have an effect on academic performance. Physical activity is positively correlated with a number of mental health constructs, such as emotional stability, future expectations, spirituality, and self-worth, all of which may have an effect on academic

performance. Incorporating physical activity breaks into the classroom has been shown to improve classroom behavior, which in turn may improve academic performance.

Keywords: Physical Education, Social Behaviors, Aspirations, Activity

Introduction:

Over the past ten years, most western colleges have seen a decrease in the amount of time dedicated to physical education, with an increase in the amount of time dedicated to other academic disciplines (Hillman et al., 2008). In an effort to improve academic achievement, colleges have reduced their physical education programs due to budgetary constraints and pressure to fulfill academic standards. Important decision makers even believed that time spent on extracurricular activities could have a detrimental effect on academic performance. Advocates of college-based physical education, however, contend that sports, physical education, and other physical activities may improve academic performance directly or indirectly through achieving broader social goals that may then have an effect on academic success.

The question of whether engaging in sports and other physical activities might improve cognitive abilities like memory and focus has garnered a lot of attention lately. Numerous comprehensive investigations that have looked at the connection between learning behavior and physical activity have revealed that collegestudents may really gain cognitively by engaging in physical activity, including sports (Sibley and Etnier, 2003; Tomporowski, 2003b). It has been proposed that physical education, exercise, and sports may improve classroom behavior in relation to these cognitive advantages, which in turn may improve students' academic progress.

Moreover, it has been proposed that sports, physical education, and physical exercise may have an effect on students' attendance at college (Long et al., 2002), which may have an effect on their academic performance. Attendance is positively correlated with exam performance, for instance, even when prior achievement is taken into consideration. Attendance has also been found to be significantly correlated with the development of skills, knowledge, and understanding, behavior, relationships, parents' perceptions of the college, and students' attitudes toward learning.

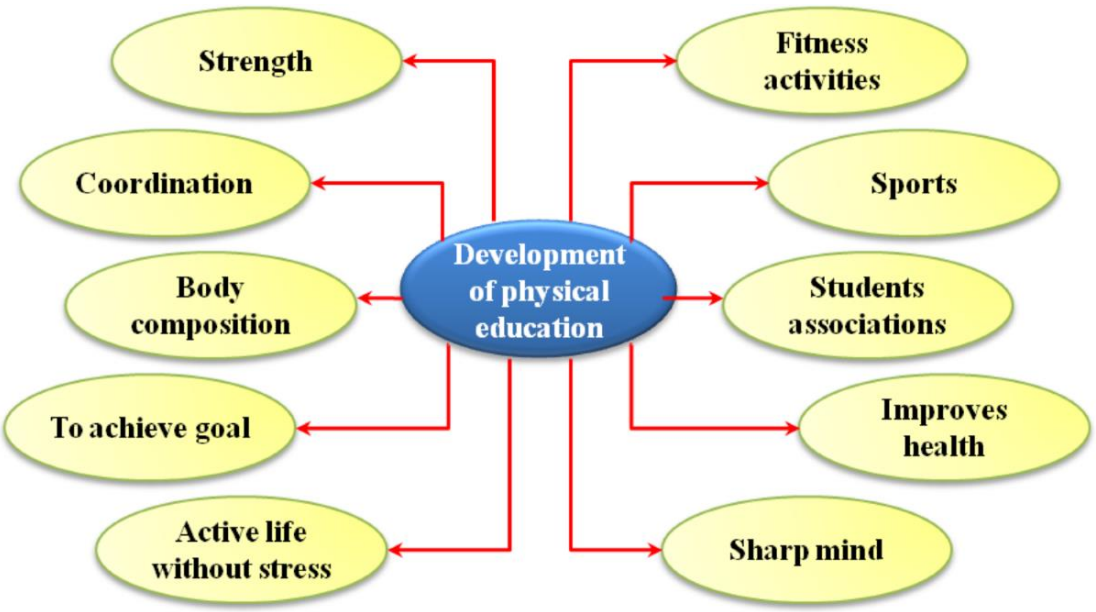

Fig 1.1 Development of Physical Education

Lastly, it has been suggested that the potential psychological and social advantages of physical education, exercise, and sports may improve mental health, feelings of college connection, and positive social behaviors—all of which may have an indirect positive impact on academic performance.

The impact on importance of physical education, physical activity and sport on academic achievement:

- The overwhelming majority of university-based, globally published studies in this area have discovered a favorable correlation between kids' involvement in physical activity and their academic success.
- In a second year follow-up, the academic achievement of kids in a case study group (who had extra physical education) was significantly higher than that of kids in a control group (who didn't get extra physical education).
- Academic achievement was significantly positively predicted by physical activity. Once gender, parental education, family structure, and absenteeism were taken into account, body mass index, food, and physical activity were found to account for up to 24% of the variation observed in academic achievement.

Participation in physical activity was significantly positively correlated with academic achievement. A higher evaluation of scholastic ability was linked to greater levels of physical activity, physical capability, and physical fitness. Pupils who reported being very active participated in sports more frequently and had higher grade point averages. Without compromising their academic performance or advancement, kids can spend more time during the college day engaging in physical activity and less time on academic learning. According to certain intervention research, increasing physical activity levels improve learning and academic performance. Engaging in intense physical activity can improve learning; nevertheless, a certain level of physical activity may be required to reap the benefits of learning. There may not be a connection between learning and physical activity, according to certain studies.

Problem Identification:

The use of cross-sectional designs in most of the work on the relationship between academic performance and physical education, sport, and physical activity in the classroom is another issue. Therefore, it is not possible to infer a causal relationship between any relationships that have been seen between academic achievement, physical education, physical exercise, and sports. Consequently, the focus of the remaining portion of this section is on longitudinal intervention studies, some of which have been carefully supervised.

Compared to a control group that only received one 40-minute non-specialist education block, students in the experimental group participated in an additional hour of physical education every day. A professional educator gave the experimental group the extra physical education they needed, which resulted in 14% less academic teaching for them than for the control group. The academic performance was expressed as the average of the annual results in science, math, science, French, and general behavior. Results showed that girls acquired a higher academic benefit than boys from the additional physical education provided in the experimental group. In grades two through six, the experimental group's kids outperformed the controls in terms of academic achievement.

Students in grades 4 and 5 at intervention colleges were given 50 minutes of extra physical activity every week, or 10 minutes per college day. Despite the intervention group losing academic class time ($P<0.05$), after 16 months the results of a standard academic test did not significantly differ between intervention and control colleges (Ahamed et al., 2007). While the additional ten

minutes of physical exercise per day may not have yielded any academic gains, it is nevertheless adequate to boost the students's health (WHO, 2010). Because the study was carried out by generalist instructors who received additional training and resources, and because it was intended to augment the current Canadian curriculum, it can be broadly used as a straightforward intervention.

Results:

When a significant amount of curricular time—up to an additional hour per day—is devoted to physical education, physical activity, or sport, learning appears to proceed more quickly per unit of classroom time. Well-controlled longitudinal studies generally support cross-sectional research in suggesting that increased physical education, physical activity, or sport maintains or enhances academic achievement. There is a wealth of research on the effects of short-term physical activity on young people's cognitive performance, as well as studies that look at the long-term (or chronic) effects of engaging in additional physical activity over several months, on cognitive function. Such information is crucial to include in this analysis because every physical education class or sporting event is a physical activity that could have an effect on learning both that day and over time. Computer tests are frequently used to assess cognitive function. These tests may include ones that measure memory, attention, perceptual abilities, and, on occasion, IQ in long-term research.

- Physical activity and cognitive performance are positively correlated, with students in elementary and middle college experiencing the greatest benefits in terms of improved cognitive function.
- A physical activity session improves perceptual abilities, attention, and concentration; however, perceptual skills appear to benefit the most from previous exercise.
- Since the acute and chronic effects of physical activity on cognition are same, it is unclear whether students get more from a longitudinal program or if they gain from each exercise session they participate in.
- Prior exercise may be good for cognitive function in both the morning and the afternoon as studies have indicated an improvement in adolescents‟ performance on visual search and attention tests in the morning and on students‟s performance in mathematics after an afternoon stroll.

- To determine the ideal level and length of cognitive stimulation for youth, more research is required.

College connectedness:

Regardless of ethnic origin, connectivity and contentment have been proposed as drivers of academic accomplishment (Trudeau & Shephard, 2008). Furthermore, according to Libbey's analysis of student-college connections, such good associations with the college aid to prevent drop-outs (2004). Regular participation in sports or physical activity has been linked to higher levels of college satisfaction and connectivity (Brown and Evans, 2002). This finding may imply that regular participation in sports or physical activity also serves to prevent dropout rates. According to a more recent study, students who engaged in extracurricular physical activities felt more engaged with their university even when their academic scores were no different from those of their peers. It was proposed that this might be because these kids receive more attention and contact with important adults more frequently than they do with extracurricular physical activities. Research has demonstrated that physical education, physical activity, and sports have a positive impact on youth's aspirations, sense of connection to their college, presence of positive social behaviors within the college, and development of leadership and citizenship skills.

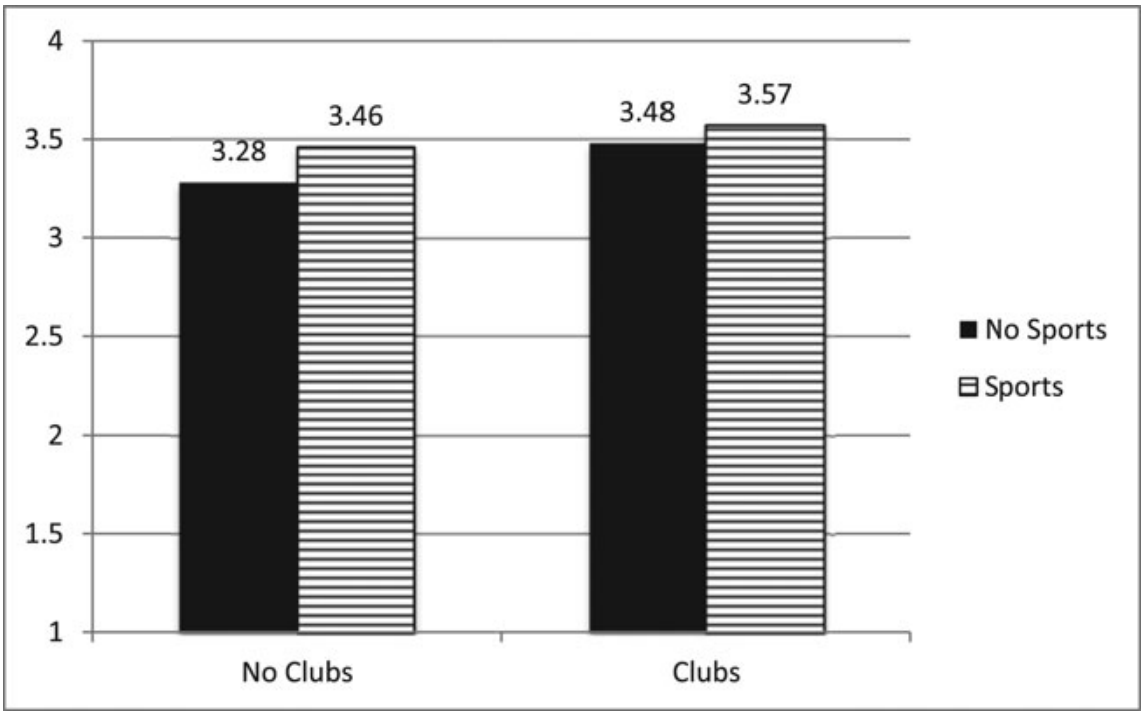

Table 1.1 College connectedness

Conclusion:

Over time, the value and appeal of volunteering also evolved, with leadership abilities and volunteer incentives rising (i.e. good citizenship). The study emphasized the advantage of using athletics and volunteering for fostering pro-social behavior and citizenship, resulting in a favorable influence on the volunteer. Numerous research have looked into how volunteering in sports may affect broader social effects. One drawback is that, despite the generally favorable effects on youth documented, young people of greater socioeconomic level and White ethnicity do appear to be the most willing to volunteer. The initiatives promote positive social and personal development, enhancing behavior, confidence, and the development of leadership and communication abilities, according to a consensus of findings. Furthermore, there has been an improvement in and, more importantly, maintenance of connections with classmates and teachers, attendance, and interest in lessons.

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SPORTS, YOGA, EXERCISE AND PHYSICAL EDUCATION: THE FOUNDATION OF THE WHOLE COMMUNITY IN DAY TODAY, LIFE ACTIVITY

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Abstract:

Many who have been denied their basic human right to physical education and college sports participation are to blame for the current state of physical inactivity among people (PES). Growing up without the basic human right to unrestricted mobility and involvement in sports allowed pupils to maintain a sedentary lifestyle. This study aimed to investigate the current state of knowledge on PES's involvement in all areas of human development and the Sustainable Development Goals (SDGs) and to increase public awareness of PES, which has been found to be declining. An external desk research approach was used to collect pertinent internet data from multiple electronic databases, including reports, policies, charters, recommendations, and other pertinent publications, in order to boost the study's overall efficacy. In order to augment the overall effectiveness of the study, an external desk research methodology was utilized to procure pertinent online data, including reports, policies, charters, recommendations, and other pertinent articles, from diverse electronic databases and websites of global organizations accountable for PES, culture, and health. Benefits of PES are explored in every area of human development, including moral, cognitive, psychosocial, and physical and mental health. Despite being crucial to human

development overall, PES has received little attention since the end of the 20th century. As a result, PES awareness has grown to be the cornerstone of the 21st-century community, helping to convert the organization's goals and objectives into practices and realities.

Keywords: Physical Education and Sports, cognitive, physical, affective, health, social, moral, culture, SDGs

Introduction:

The idea that declining PES causes a commensurate drop in physical activity (PA), which in turn causes a rise in hypokinetic disorders in college-age children and adolescents, is one of the most important current issues in physical exercise and public health. SHAPE America states that PES is a planned, sequential K–12 standards-based program with written curricula and appropriate instruction designed to develop the motor skills, knowledge, and behaviors of active living, physical fitness, sportsmanship, self-efficacy, and emotional intelligence. Bailey adds that PES may also significantly support the development of children's social skills and behaviors, self-esteem, and precollege attitudes, as well as the development of academic and cognitive development under certain conditions.

According to Guedes, the main objective of PES is to make its pedagogical approach of educating the body permanent by teaching kids about movement and helping them acquire the skills they need to become proficient in a variety of PAs. It also aims to foster an interest in PA and help them develop the patterns that are vital for healthy development and lay the groundwork for an adult's healthy lifestyle, as reported by ICSSPE. The development of motor skills, knowledge, and behaviors related to active living, physical fitness, sportsmanship, self-efficacy, and emotional intelligence is the aim of PES, according to SHAPE America.

Rasberry et al.have also documented an increasing number of detrimental effects in a variety of areas, including the physical (poor bone density, strength, and flexibility), psychological (increase in major depression, poor concentration and self-esteem, negative bullying), and academic (drop in standardized test grade). Above all, out of the six risk factors, physical inactivity came in third place, contributing to 7% of DALYs and 19% of global mortality. Furthermore, physical inactivity is linked to 21–25%, 27%, and 30% of the burden of diabetes, ischemic heart disease, and breast and colon cancer, respectively, according to WHO.

An Overview of Physical Education and Sports:

According to Van Dalen and Bennett, the early societies' educational philosophy was "education for survival," which is where PES got its start. In this sense, education served to guarantee society's survival. As a result, the curriculum included lessons on hunting, throwing, running, jumping, and other activities that would help people find food and defend their family from dangerous animals and other calamities.

Similarly, the idea of dualism served as the philosophical basis for education for the ancient Greeks, and according to Laker, this concept was included in the Greek curriculum under the categories of academics and gymnastics. Education, thus, was essentially about guaranteeing the physical and aesthetic growth of the body through sport; Sparta, for example, encouraged PES by emphasizing military fitness, while Athens focused on a more comprehensive education.

Methodology Used:

In order to improve the overall efficacy of the research, this review was carried out using Mangal and Shubhra's external desk research approach. A thorough search was conducted in order to find pertinent papers, policies, charters, guidelines, international position statements, support statements, and other relevant documents and publications for this study. A search procedure was created beforehand in order to record the inclusion criteria and analytic methodology. By doing this, a search technique was created to find relevant publications in the literature that have key phrases in both their title and abstract.

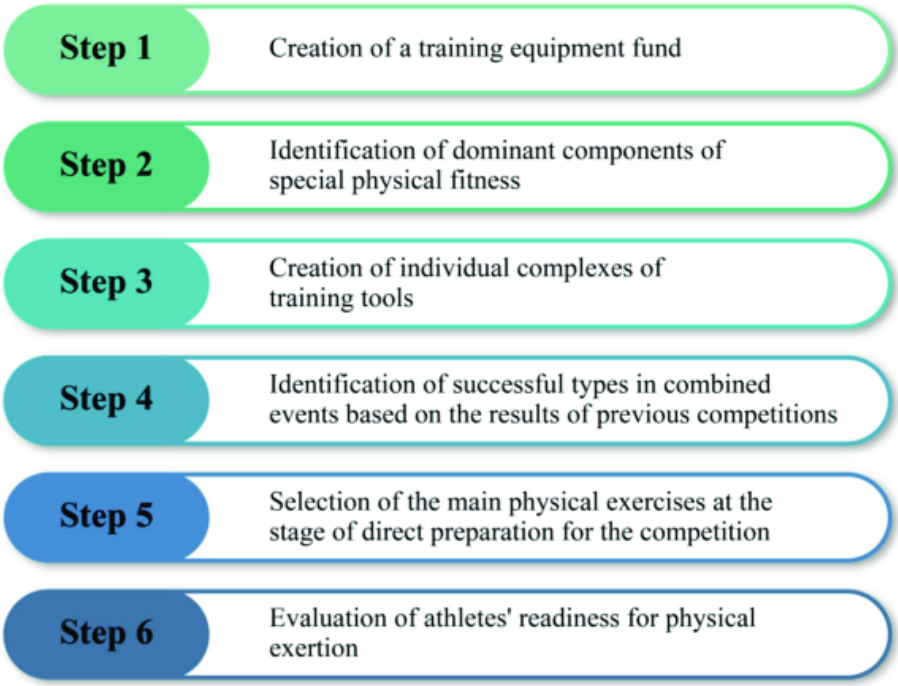

Fig 1.1 An algorithm for creating a personalized competition training regimen

The English-language literature that has already been published on PES's function in the social and health sciences was the primary focus of the search. It was therefore limited to the topics of PA, sports, recreation, dance, and recess. To guarantee authenticity and reliability, the researchers included study articles, reports, statistics, and information from census or other scientific data-collection techniques. Therefore, information and data from personal diaries, newspapers, and periodicals were not included in this study in order to avoid personal bias. Similarly, to avoid assuming that the necessary data would be available, the researchers made sure that the pertinent data were available before moving forward with this study.

Advantage of Physical Education and Sports:

Effective PA and PES are proven essential components in the formative growth of children and adolescents, as well as an evidence-based approach to improving academics and benefiting students' physical, cognitive, and mental health. PES, according to SHAPE America, creates a framework of life skills that shapes the whole person, encouraging smart choices and cultivating a healthy lifestyle. Thus, the role of PES under the SDGs and the areas of cognition, physicality, emotion, health, society, morality, and culture was examined in the part that follows.

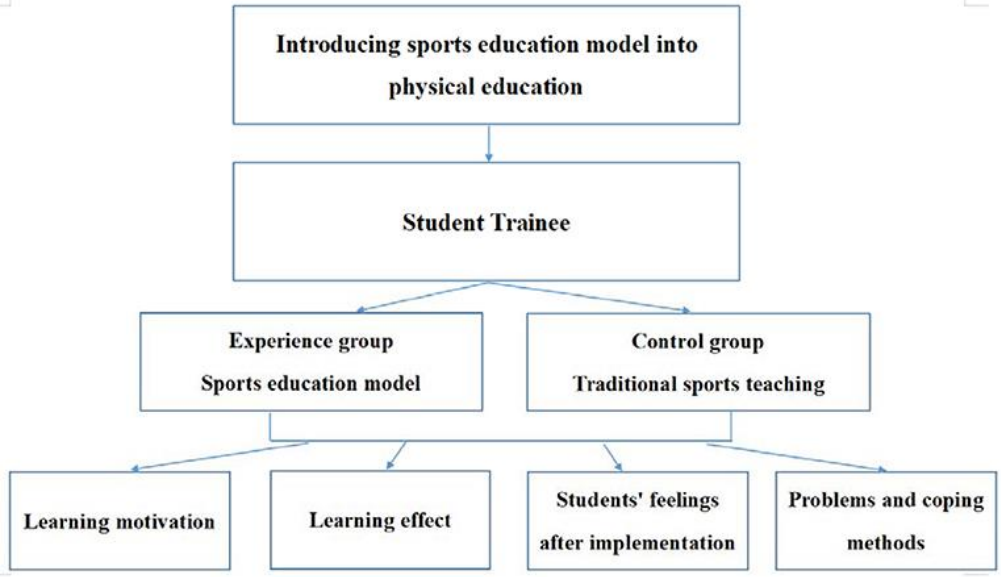

Fig 1.2 The Impact of the Education Model on Students' Learning Behavior in Physical Education

Physical Activity of Physical Education and Sports:

Bailey's perspective is supported by growing findings from other researchers who asserted that engagement in high-quality physical education programs enhances participants' body mass index and helps them maintain a normal weight both during their college years and after. Effective PES engagement reduces the likelihood that children would experience a mass increase in the future, as shown by Fernandes and Sturm. "More physical education is associated with lower Body Mass Index scores," according to Madsen et al. Relatedly, Cawley et al. shown that PES reduces male kids in grade five's body mass index and likelihood of obesity.

Physical Education Vs Sport

Characteristics	PE (Physical Education)	Sports
Definition	Instructions are given in push, for the development and care of the body.	Activities that Involves physical exertion and skill where an individual or team competes against each other for entertainment or rewards
Acquisition	This is acquired using a linear pedagogy. This style is not strict and focuses on enjoyment, health and fitness promotion	Acquired through non-linear pedagogy where the teaching is focused on the player.
Application	This is part of many education systems in primary and secondary schools	Sport can be an optional activity and is not involved In the regular education system as a subject

In light of this, it is evident that PES must be continued and that it should provide the students with all of the affective benefits covered in the literature described above. While much research remains to be done to determine the true mechanism and best type of PA that will most likely benefit students affectively, qualified, experienced, and capable teachers are required to guide students through some curriculum models that have been shown to support the affective domain, such as sports education, teaching social responsibility, personal and personal development, cooperative learning, etc.

Parallel to this, the Europe report claimed that PES is the only organization that gives students the chance to interact with people, communicate with them, and grow as leaders. More significantly, it teaches the participants pertinent social skills like respect for others, tolerance, and adjusting components of collectivism like cooperation, teamwork, and coherence, to mention a few, as stated by Svoboda. Bailey et al. presented an alternative perspective that bolsters this claim. They examined the impact of PES on the existing global divide and contended that PES can serve

as a bridge between children from diverse social and economic backgrounds, as well as other countries.

The quality PES provided by professionally trained and qualified PES teachers adopting some of the current pedagogical models acknowledged to promote moral aspects of the students through their constructivism approach is important to note despite these contradictions in the moral benefits accruing from PES participation. One such model is sports education, which focuses on both duty and playing roles and has been acknowledged to serve the needy under the moral domain. PES must therefore be accepted in colleges in order to fulfill all moral benefits associated with it.

Conclusion:

This study offers a significant chance to further our knowledge of the role that physical education and play (PES) play in encouraging physically active lifestyles in college-age children and adolescents as well as the larger community. In order to strengthen PES in colleges and ensure that it fulfills its intended purpose for all students worldwide, it is crucial to alert governments about PES enforcement. PES has been shown to be so important to holistic education that it is now regarded as the foundation of the entire community in the twenty-first century. This is because college-age children and adolescents are the ones who eventually grow up to be adults and, eventually, elderly members of their communities. In other words, providing college-age children with high-quality PES also serves to promote an active lifestyle for the community as a whole. The benefits of PES in all domains of human development—that is, the mental, physical, affective, health, social, moral, and cultural facets of life—are the basis for this, as this study has demonstrated.

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