Anusandhanvallari
Vol 2026, No.1
January 2026
ISSN 2229-3388

Influence of Kinovea Software and Food Supplement along with Anaerobic Training on Physical Fitness Variable of Sportsmen

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Abstract: The present study is the influence of Kinovea Software and food supplement along with anaerobic training on Physical fitness variable of sportsmen. To accomplish the reason of the study, 60 sportsmen randomly selected from Ayya Nadar Janaki Ammal College, Sivakasi falling in the age group of eighteen to twenty five years will be selected and randomly divide in to three groups. Sportsmen should have been participated in intercollegiate tournament. Random group design will be adopted in this study the researcher make a meticulous analysis to discover out whether there is any major improvement in the mean level of the group in selected Physical fitness variable. They divided in to three groups. Experiment group I had taken Anaerobic Training with Kinovea Software. Experimental group II had taken the Anaerobic Training with Food supplement. Group III was act as Control Group while they will undergo for their regular training. Speed and strength was chosen as Physical fitness variable. Anaerobic Training with Kinovea Software is more effective than Anaerobic Training with Food supplement and Anaerobic Training with Food supplement is more effective than Control group in promoting Speed and strength of the Sportsmen.

Keywords: Anaerobic training, Food supplement, Kinovea Software

Introduction

Video analysis is the major role in sports performance. Biomechanical analysis helps to correct the technique of activity, to correct the exercise technique and also to find out the weakness areas etc. Kinovea is a freeware software and user friendly for all the sports scientists and coaches as well. It helps to analyse the 2D motion of any sport with minimal perspective errors. It helps to analyse the various angle of motion and velocities that occur in our human body during various sports activities. It helps to analyse the human gait in 2D perspective. It helps to collect the quantitative data with minimal perspective errors. It also can be used as a assessment tool for the functional movement screening by the physiotherapists. Also we can download the analysed data in a video format. Goblet Squat Analysis* It helps to analyse the Range of motion in each joint during the concentric and eccentric phase. It helps to analyse the torso (spine) angle deviation during the isometric phase.(pelvic tilt). It helps to analyse the time taken between each reps in each phase.(velocity based training) It helps to compare the knee valgus deviation range between both legs. Also during jumping squats can analyse the ground contact time reaction and we also analyse the maximum triple extension of lower limb joints (hip, knee, ankle) Also analyse the vertical displacement time and range during jumping squats Bozzato (2025). Numerous factors can be bearing the performance of a players during struggle which related to special domains. Dave (2025) The certain nutrition and dietary approaches can enhance the sports performance and also nutrition is essential for an athlete's good performance (Manikandan and Selvam, 2010). Nutrition is a very imperative role to reach the sky-scraping level of achievement in sports. Ramos et al. (2026) Nutritional position has a direct deportment on the level of fitness. Hence, physical fitness and training are very much dependent on nutritional status of sports personnel (Beals and Manore, 1998). The main dietary goal for active supplement information from nutritionists/dietitians and individuals is to obtain adequate nutrition to optimize health and fitness or sports performance (Congeni and Miller, 2002; Berning, 2000). In addition, several natural food

components have been found to show physiological effects, and some of them are considered to be useful for promoting exercise performance or for prevention of injury (Wataru et al., 2006). Statement of the problem is to identify the impact of Food supplement and Kinovea software along with Anaerobic Training given to experimental groups on Physical fitness variable

Research Methodology

sixty sportsmen selected from Ayya Nadar Janaki Ammal College, Sivakasi falling age range of eighteen to twenty five years were selected and randomly divided in to three groups. Sportsmen should have been participated in intercollegiate tournament. Random group design was adopted. They divided in to three groups. Group I will act as Experiment group I had taken Anaerobic Training with Kinovea software. Group II will act as Experimental group II had taken the Anaerobic Training with Food supplement. Group III will act as Control Group while they undergone for their regular training

Physical Fitness Variable

Variables	Tests
Speed	50 yard dash
Leg explosive power	Vertical jump

Anaerobic Training

Sr.No	Days	Monday –Thursday	Tuesday –Friday	Wednesday – Saturday
(1)	**Warming Up** **5 to10 Minutes**	Mild jogging followed by complete body stretching then afterhead to toe exercises then 2 or 3 longer strides running of 50 meters	Mild jogging followed by complete body stretching then after head to toe exercises then 2 or 3 longer strides running of 50 meters	Mild jogging followed by complete body stretching then after head to toe exercises then 2 or 3 longer strides running of 50 meters
(2)	**Main Course**	30 minutes	30 minutes	30 minutes
	Components to be focused	Speed	Speed	Speed
	Method	Extensive intervalmethod for short Duration	Changing the pace after each specified time duration.	Changing the pace after each specified distance.
	Activities	4 longer strides – **50**	**Two sets of 3.00** minutes of jogging followed by	**300**meters. Brisk

	Format	meters. followed by 2 sprints **100** meters. then 2 times hopping **20** meters. then 6 sprints **20** meters. then 2 times slow pace running **80**meters. Recovery time- 90 to 180 Seconds	**0.20** seconds of sprint then **3.00** minutes of slow running then **20** seconds longer stridesthen **2** min brisk walking ending with **30** seconds of fastrunning. Recovery time- 90 to180 Seconds.	walking **40**meters. sprint **50**meters. jogging **50**meters. sprint **100**meters. mild jogging **30**meters. hopping **500**meters. jogging **30**meters. longer strides **100**meters. walking (Two Times in continuation)
	Intensity	80 to 85%	80 to 85%	80 to 85%
	Max. Heart RateRange	180 Beats/Minutes or more	160 to 180 Beats/Minutes	140 to 180 Beats/Minutes
	Min Heart Rate	125 B/M	125 B/M	120 Beats/Minutes
	Nature of Recovery	Incomplete	Incomplete	Incomplete
(3)	**Cooling Down** **5 to 10 Minutes**	Upper and lower extremities stretching, sitting and lying down exercises with partners, forward lounging, and side ward bending.	Upper and lower extremities stretching, sitting and lying down exercises with partners, forward lounging, side ward bending.	Upper and lower extremities stretching,sitting and lying down exercises with partners, forward lounging, side ward bending.

Food Supplement

It was made by dry roasted of Whole wheat, Finger Millet (Ragi), Pearl millet, Green gram, Red rice, Black gram, Brown /black channa, Roasted gram, Horse gram, Groundnut, corn, Barley, peanut, soya beans, Cashew, Almond, Dry ginger & Cardamom before going to fine powder and let it cool down too. Take two table spoon of food supplement powder in a pan and add 100 to 150 ml of water at room temperature. mix it well without any lumps and cook on low flame until it gets thick. Add sugar for sweet as per taste preference

Kinovea

Take a video of work out who had undergone the training in the experimental group I and upload in Kinovea 2d software and manually worked on it and avoided the unnecessary movements in anaerobic training to minimize the energy and give maximum output

Analysis of Data

This table shows that ANCOVA of 50yard dash (speed) among Anaerobic training with Kinovea Software, Anaerobic training along with food supplement and control group

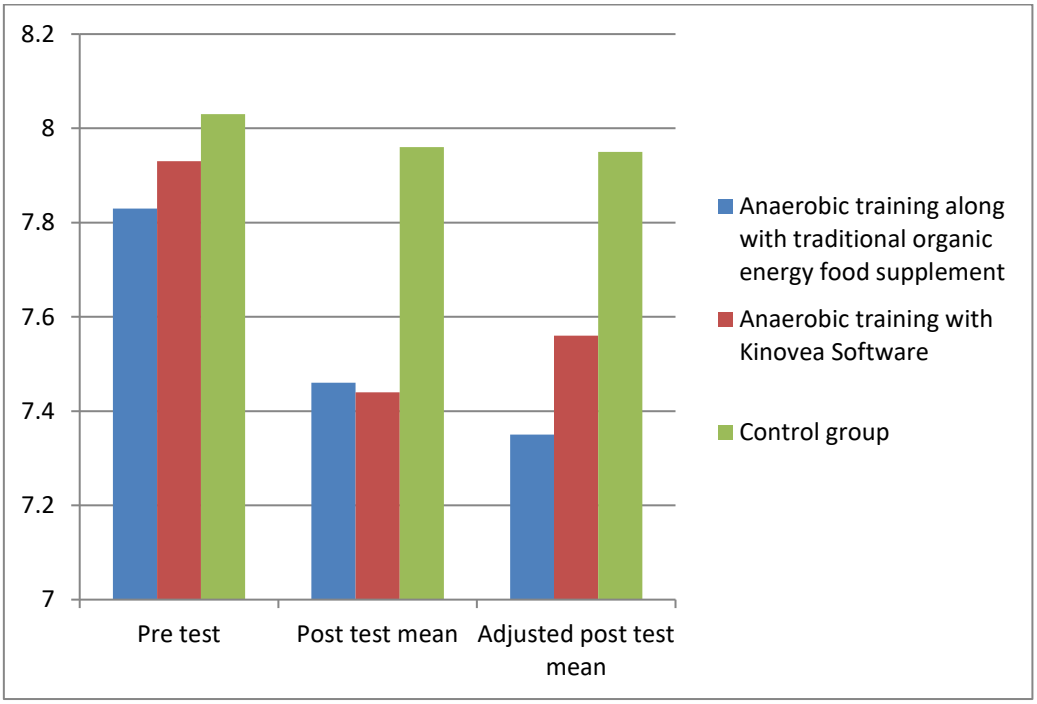
Group	Anaerobic training along with food supplement	Anaerobic training with Kinovea Software	Control	SS	Degrees of freedom	MSS	'F'Ratio
Pre test	7.83	7.93	8.03	B: 0.386 W: 29.22	2 57	0.193 0.513	0.377
Post test mean	7.46	7.44	7.96	B: 3.92 W: 32.91	2 57	1.96 0.5777	3.40*
Adjusted post test mean	7.35	7.56	7.95	B: 3.45 W:20.28	2 56	1.72 0.432	3.99*

Table value 3.16

This table shows the paired adjusted final means and difference between means of speed among Anaerobic training with Kinovea Software, Anaerobic training along with food supplement and control group

Anaerobic training along with food supplement	Anaerobic training with Kinovea Software	Control group	Mean difference
7.35	**7.56**		**0.21**
7.35		**7.95**	**0.6***
	7.56	**7.95**	**0.39**

Graphical Representation For Speed



This table shows that ANCOVA of vertical jump (explosive power) among Anaerobic training with Kinovea Software, Anaerobic training along with food supplement and control group

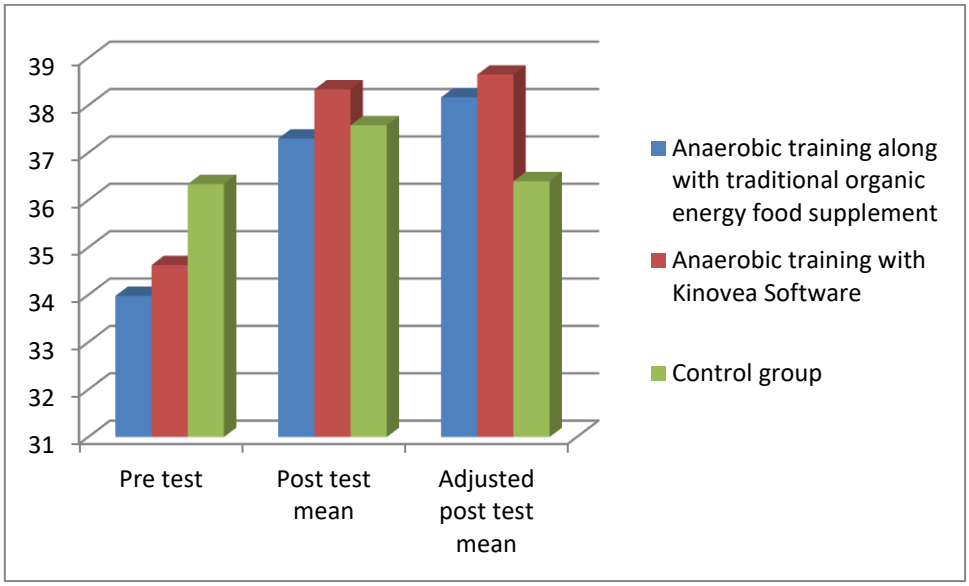
Group	Anaerobic training along with food supplement	Anaerobic training with Kinovea Software	Control group	Source of varience	DF	Mean sum of squares	F- Ratio
Pre test	33.98	34.63	36.34	B: 0.586 W: 32.22	2 57	1.293 0.565	2.29
Post test mean	37.30	38.34	37.58	B: 4.2 W: 33.91	2 57	2.1 0.595	3.53*
Adjusted post test mean	38.17	38.65	36.40	B: 3.58 W:21.24	2 56	1.79 0.3726	4.80*

Table value 3.16

This table shows the paired adjusted final means and difference between means of explosive strength among Anaerobic training with Kinovea Software, Anaerobic training along with food supplement and control group

Anaerobic training along with food supplement	Anaerobic training with Kinovea Software	Control group	Mean difference
38.17	38.65		**0.48***
38.17		36.40	**1.77***
	38.65	36.40	**2.25***

Graphical Representation For Explosive Power



Discussion Of Findings

`This result reveals that there is good and huge variation in the speed inbetween pre test and post test means of Anaerobic Training with Food supplement group (experimental group I) and Anaerobic Training with Kinovea (experimental group II).

No variation in speed inbetween the pretest and post test of control group. concerning statistical ANCOVA, it's observed that there is a good and huge variation in speed of the adjusted postmean of food supplement, kinovea and control. The results of the adjusted post mean indicate that there is a huge variation between Anaerobic Training with food supplement and control group on speed.

No variation between both Anaerobic Training with Kinovea and Anaerobic Training with Food supplement group and also between Anaerobic Training with Food supplement group and control group in speed among sportsmen.

Good and huge variation in the explosive strength inbetween the pretest and post test means of Anaerobic Training with Food supplement group and Anaerobic Training with Kinovea.

No variation in Explosive strength inbetween the pretest and post test of control group. Concerning statistical ANCOVA, it is observed, there is a good variation in the explosive strength among the adjusted post test means of groups (Anaerobic Training with Kinovea, Anaerobic Training with Food supplement group and control).

The results of the adjusted post mean show that there is a huge variation between Anaerobic Training with food supplement and control group on explosive strength.

This result indicates the Anaerobic Training with Kinovea software group had significantly influenced physical fitness variables namely speed and explosive power of Sportsmen

This result indicates the Anaerobic Training with Food supplement had significantly influenced physical fitness variables namely speed and explosive power of Sportsmen.

Anaerobic Training with Food supplement group made significant improvement better than control group in speed and explosive power.

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