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EFFECT OF SAQ TRAINING ON STRENGTH AMONG COLLEGE STUDENTS

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Abstract:

The purpose of the study was to investigate the effect of SAQ training on strength among college students. For the present study the 30 male college students from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present study pre test - post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent SAQ training only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05. It was observed that the twelve weeks of SAQ training have significantly improved the strength of college students.

Key Words: SAQ Training, Strength, College Students.

Introduction:

Speed, agility, and quickness training has become a popular way to train athletes. Whether they are school children on a hockey field or professional in a training camp, they can all benefit from speed, agility, and quickness training. This method has been around for several years, but it is not used by all athletes primarily due to a lack of education regarding the drills. Speed, agility, and quickness training may be used to increase speed or strength, or the ability to exert maximal force during high-speed movements. Some benefits of speed, agility, and quickness training include increases in muscular power in all multiplanar movements; brain signal efficiency; kinaesthetic or body spatial awareness; motor skills; and reaction time (Karthick, et al. 2016).

Speed has long been considered as just one single entity: how fast an object goes from point A to point B. Only recently has speed been studied and broken down into stages such as acceleration, the planning out phase, deceleration, etc. Much of this research has been carried out by sports coaches involved in straight-line running, so that the jumping, turning and zigzagging speed necessary in volleyball has been somewhat neglected. Those involved with the development of SAQ programmes have sought to fill this void so as to develop all types of speed, particularly for team sports such as volleyball. SAQ programmes break speed down into three main areas of skill: speed, agility and quickness. Although these may appear to be quite similar, they are in fact very different in terms of how they are trained, developed and integrated into a player's performance. When these skills are successfully combined and specialist SAQ equipment is utilised, they provide the coach with the tools to make good player into an outstanding one. It is remarkable what players can achieve with an SAQ programme (Alan, 2001). Speed of execution and technical precision are fundamental athletic goals and are, of course, interrelated. Movement speed is the result of explosive force but is often incorrectly believed to be independent from - or incompatible with-strength. In fact, explosive speed-strength applied to functional motor skills is the basis for speed, agility, and quickness (Moreno, 1995).

Running is the basis of many sports and has a ballistic quality common to other movements. However, most sports involve much more than linear sprinting at a top speed. The ability to change direction and velocity is often more important. Changes in direction involve explosive braking actions that are executed by rapidly and forcibly lengthening the muscles. The inability to withstand such extreme stretch – loading, as it is called, can result in injury, technical inefficiency, and outright nonathleticism. This is especially important when considering that the body is alternately supported on one leg during speed, agility, and quickness manoeuvres. It is, therefore, a serious error to focus one's testing and training exclusively on linear speed mechanics while neglecting decelerative mechanics and oblique angles of acceleration (Alan, 2001).

Changing speed and direction also requires the muscles to shorten in an elastic or reactive manner, immediately after lengthening. In this sense, many speed, agility, and quickness drills can be considered single-leg plyometric movements with horizontal emphasis. Therefore, reactive types of single leg movements should be progressively addressed in conjunction with heavy resistance training and testing (Lee, et al. 2000). Most sport skills involve rapid force generation. As a case in point, force is applied for one to two seconds during many athletic tasks, whereas absolute maximum force production requires up to six to eight seconds. Even in nonballistic movements, performance is usually determined by the ability to develop force quickly and achieve a "critical power out-put" (velocity with given resistance). Speed, agility and neuromuscular coordination are

components of physical training that are extremely important for athletes in all sports and events. Speed is defined as the rate of motion or the velocity of the body or any one of its parts. While average velocity is the most frequently used measure of speed, speed can also be measured in terms of acceleration and maximal or peak velocity. Speed can be assessed relatively to specific body segment, e.g., speed of arm movement, to the total body, and to the external objects propelled by the body. Assessment can be simple, such as timing the individual through a set distance, or it can be complex, using cinematography, elaborate timing device, or fundamental equation to calculate acceleration, sequentially, at fixed segment in the total movement (Lee, et al. 2000).

Reviews:

Vallimurugan & Vincent (2013) examined the effect of SAQ training on selected physical fitness parameters of men football players. To achieve the purpose of the present study, thirty college men football players from Selvam Group of Institutions, Namakkal, Tamilnadu were selected as subjects at random and their age ranged from 18 to 25 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent SAQ training and Group 'B' underwent no training. The experimental group undergone training schedule for six weeks on alternate days. The variables namely speed, agility and flexibility were tested using analysis of covariance. It was found that the SAQ training group showed significant improvement on all selected variables among football players. It was also found that the experimental group shown significant improvement on all selected variables among football players than the control group.

Vincent & Vallimurugan (2013) conducted a study to investigate the effect of Twelve weeks S.A.Q. drills training programme on selected bio-chemical variables among football players. For the present study the subjects were 30 male football players from Selvam Group of Institutions, Namakkal, Tamilnadu were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent SAQ training and Group 'B' underwent no training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of S.A.Q. training programme. The level of significance was set at 0.05. The findings of the present study have strongly indicates that S.A.Q. training of twelve weeks has significant effect on selected bio-chemical variables i.e., total cholesterol, LDL and HDL of football players. Hence the hypothesis earlier set that S.A.Q. training programme would have been significant effect on selected bio-chemical variables in light of the same the hypothesis is accepted. Significant effect of S.A.Q. training was found on total cholesterol, LDL and HDL.

Vincent & Vallimurugan (2013) investigated the effect of SAQ training on selected physical fitness and bio-chemical variables among football players. For the present study 30 male football players from Selvam Group of Institutions, Namakkal, Tamilnadu were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent SAQ training and Group 'B' underwent no training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) technique to find out the effect of SAQ training. The level of significance was set at 0.05. The findings of the present study have strongly indicates that SAQ training has significant effect on selected physical fitness and bio-chemical variables i.e., speed, agility, flexibility, LDL and HDL of football players. Hence the hypothesis earlier set that S.A.Q training would have been significant effect on selected physical fitness and bio-chemical variables in light of the same the hypothesis was accepted. Significant effect of S.A.Q. training was found on speed, agility, flexibility, LDL and HDL.

Zoran, et al. (2013) conducted a study to determine the effects of a 12 week conditioning programme involving speed, agility and quickness (SAQ) training and its effect on agility performance in young soccer players. Soccer players were randomly assigned to two groups: experimental group (EG; n = 66, body mass: 71.3 ± 5.9 kg; body height: 1.77 ± 0.07 m) and control group (CG; n = 66, body mass: 70.6 ± 4.9 kg; body height: 1.76 ± 0.06 m). Agility performance was assessed using field tests: Slalom; Slalom with ball; Sprint with 90° turns; Sprint with 90° turns with ball; Sprint with 180° turns; Sprint with backward and forward running; Sprint 4 x 5 m. Statistically significant improvements ($p < 0.05$) between pre and post training were evident for almost all measures of agility, with and without the ball, with the exception being the Sprint with backward and forward running. This suggests that SAQ training is an effective way of improving agility, with and without the ball, for young soccer players and can be included in physical conditioning programmes.

BujjiBabu & Johnson (2012) investigated the effect of plyometric (PLYO) training and SAQ training for six week on speed and agility of male handball players. To achieve the purpose 30 male handball players were selected randomly from SAI SportsTrainingCentre Sarurnagar, Hyderabad, Andhra Pradesh. The selected subjects were assigned into 3 groups: PLYO training (n=10), SAQ training group (n=10) and control (CON) group (n=10). Speed and agility was selected as criterion variable and tested by 30 meters sprint and T-test. The

duration of the training prescribed in this study was six weeks that has been carried out during preparatory phase. Pretest and posttest data were measured on the handball field. The data was analyzed by applying analysis of covariance (ANCOVA). The result of the study showed that the adjusted posttest mean is significant on speed [F (2, 26) = 3.592, $p < 0.05$] and agility [F(2, 26) = 46.88, $p < 0.05$]. Further, it is found that SAQ training significantly improved the speed and agility of handball players compared to PLYO and CON group. In SAQ training group 2.02 and 7.17 percentage of improvement were noticed on speed and agility of male handball players.

Akhil, et al. (2011) studied the effect of six weeks S.A.Q. drills training programme on selected anthropometrical variables. For the present study the subjects were 30 male hockey players from Varanasi. The subjects were selected randomly from the group of children attending the regular hockey coaching programme at USB ground at BHU, Varanasi. The researcher had been selected the following variables for the present study: Anthropometrical Variables: i.e. Height and Weight. The data was collected before and after six weeks of training. The data was analysed by applying Analysis of Co-Variance (ANCOVA) Technique. The level of significance was set at 0.05. The findings of the present study have strongly indicates that S.A.Q. drills training of six weeks have significant effect on selected anthropometrical variables i.e., Height and weight of beginner hockey players. Hence the hypothesis earlier set that S.A.Q. drills training programme would have been significant effect on selected anthropometrical variables in light of the same the hypothesis is accepted. Significant effect of S.A.Q. training was found on height. Significant effect of S.A.Q. training was found on body weight.

Goran, et al. (2011) conducted a study to determine the correlation between the speed, agility and quickness, and to determine the correlation between tests with and without the ball in young soccer players. Research was carried out on a sample of 25 elite soccer players from the Serbian U-16 national team, (aged 15.19±0.32; height176.04±6.00 cm; body mass 65.19±9.41 kg). The participants were tested on a 10-m Sprint (B10S), 30-m Sprint (B30S), Flying 20-m Sprint (B20S), Zigzag test (CC) and Zigzag with the Ball (CCL). Significant relationships were found between test CC and B30S (r=0.560), as well as between test CC and B20S (r=0.603). There were no significant relationships between CC and B10S (r=0.323). The agility test with the ball (CCL) has not shown significant correlation with speed and quickness (r=0.093-0.247). The SAQ training method has made training much more applied than previously although it is mainly represented by the movements during which the control and contact with the ball are at a minimum. This causes the loss of specificity between exercises and demands in the demonstration both during the testing and the game. This study has confirmed that the structure of the agility with the ball is much more complex in comparison with the one without the ball. In addition, this research has shown that the basic skills without the ball have much stronger relation among speed, agility and quickness than the skills with the ball.

Methodology:

The purpose of the study was to investigate the effect of SAQ training on strength among college students. For the present study the 30 male college students from Mannaniya College of Arts and Science, Thiruvananthapuram, Kerala were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each. Group 'A' underwent SAQ training only, group 'B' have not underwent any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05.

Results:

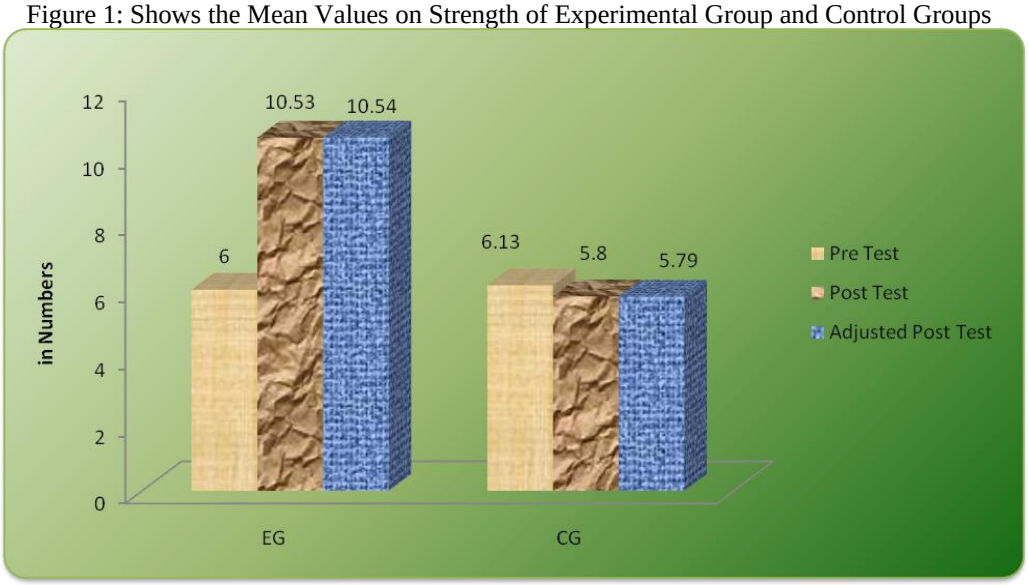
Table 1: Computation of Mean and Analysis of Covariance of Strength of Experimental and Control Groups

	Experimental Group	**Control Group**	**Source of Variance**	**Sum of Squares**	**df**	**Mean Square**	**F**
Pre Test Mean	6.00	6.13	BG	0.13	1	0.13	0.27
			WG	13.73	28	0.49	
Post Test Mean	10.53	5.80	BG	168.03	1	168.03	291.62*
			WG	16.13	28	0.57	
Adjusted Post Mean	10.54	5.79	BG	167.37	1	167.37	282.61*
			WG	15.99	27	0.59	

* Significant at 0.05 level, Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of strength of experimental and control groups were 10.54 and 5.79 respectively. The obtained F-ratio of 204.86 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on strength. The above table also indicates that both pre and post test means of experimental and control groups differ significantly. The pre, post and adjusted post mean values of strength of both experimental and control groups are graphically represented in the figure 1.

Figure 1: Shows the Mean Values on Strength of Experimental Group and Control Groups



Conclusion:

It was observed that the twelve weeks of SAQ training have significantly improved the strength of college students.

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