

Effects of Twelve Weeks SAQ Combine Training on Body Composition Variables among School Athletes



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Abstract

The objective of this study was to find out the effects of twelve week SAQ combine training (with equipment and without equipment exercise) on body composition (percentage of body fat, total body fat, lean body mass) among school athletes for the purpose of the study 30 school athletes of jawahar navodaya Vidyalaya, Longowal, Sangrur, Punjab were randomly selected as subjects. The age was ranged from 14-17 years. The subjects were divided into two groups i.e. experimental group (N=15) and control group (N=15). For experimental group, SAQ combine training (with equipment and without equipment exercise) was given to the subjects for two days per week (Wednesday and Saturday) during 12 weeks. To compare the mean difference between the pre-test data and post-test data 't' test was applied. The level of significance was set at 0.05 level of confidence. Statistical calculation on gathered data showed that there were significant differences found on percentage of body fat, total body fat, lean body mass among school athletes. The control group showed no significant differences in the same measures post-intervention.

Keywords: Body Composition, Speed, Agility, Quickness, School Athletes.

Introduction

Competition represents an essential characteristic of growing and developing children in the sports environment. Properly guided competitions can benefit in overall development and play an active role in children's growth and social interrelationship. Competitions give children the opportunity to apply the technical and tactical skill learned in practice of an organized game, experience of winning and losing and to develop skill and values that will serve them in later life. However there are many competitive sports programs that place excessive physical and psychological demands on children. The adverse effect of these early stresses can be detrimental to growth and may lead young participant to lose interest and drop out before fully developing their talents. Therefore, we should treat competitions only as a sporting and social tool, not as an end in itself to immediately produce a champion. A positive experience in sports and competitions can result in an active life style for many years, and this is more important being a champion athlete (*Bompa, 2000*).

Sport training consists of activities and movements which generally lead to high fatigue. Fatigue is the direct result of the load by physical activity. Load therefore, is of central importance in sports training. Without maintaining the load caused through physical exercise performance cannot be improved, stabilized and maintained because over load results in stagnation of performance. *Polman et al. (2009)* stated that the SAQ training method "involves progressive exercises to develop an athlete's ability to be more skilful at faster speeds and with greater precision". All athletes require a high level of motor fitness to cope with the demands of the game. Therefore it is essential that coaches, physical education teachers condition their athletes to improve their sport specific attributes and prepare them for competition in an effective manner with the help of SAQ training method. Motor fitness level of the player play very important role in the prediction of the success of an individual during completion. The development scope of athlete depends to great extent on her/his motor development .By motor development it is presumed that development of strength, speed, agility, power and precision in the use of his arms and legs and other body muscles coordination ability.

Suitable levels of body composition are also important for athletic completion. Excess body fat lowers aerobic fitness and reduces the ability to perform many activities requiring jumping and moving quickly.

However, being too thin is not desirable either. Suitable body composition is important for general health, appearance and for maximizing athletic performance. For these reasons, accurate measurement of body composition are needed to develop sound preventive health and athletic programme (Baumgartner et.al, 1995).

Method and Procedure

In this study, thirty (30) school athletes of Jawahar Navodaya Vidyalaya, Longowal, Sangrur, Punjab were randomly selected as subjects. The subjects were divided into two groups i.e. experimental group (N=15) and control group (N=15). The age was ranged from 14-17 years. No special motivation techniques were used to enhance their performance.



Fig-1: Control Group



Fig -2: Experimental Group

The SAQ combine training (with equipment and without equipment exercise) group was scheduled of twelve weeks from 3.30-5.00pm per day for twice a week i.e. on Wednesday and Saturday. The exercises were followed in progression of speed, agility, quickness exercise for the 1 to 6 weeks and combination of speed, agility, and quickness,

combination of speed and quickness, combination of agility and quickness exercise for the 7 to 12 weeks. Post-tests were done on both groups after 12 weeks of treatment to compare the initial and final mean. To find out the differences of pre-test and post-test, t-ratio was applied. The level of significance was set at 0.05.



Figure 3: Illustrations of Biceps Skin Fold, Triceps Skin Fold, Sub Scapular Skin Fold, Supra-Iliac Skin Fold Measurements

Results and Discussion

The data was analyzed by employing descriptive test and 't'-test. The level of significance was set at 0.05. The comparison of initial and final

scores on body composition (percentage of body fat, total body fat, lean body mass) for experimental and control groups are presented in table-1 & 2.

Table-1
Comparison of Pre-Test and Post-Test of Saq Combine Training Group with Regard to Body Composition among Male School Athletes

Variable	Testing Condition	Mean	SD	MD	SEM	't'	Sig.
Percentage of Body Fat	Pre-Test Post-Test	16.80 15.86	3.30 3.30	0.94	0.84	11.20*	0.000
Total Body Fat	Pre-Test Post-Test	8.77 7.90	2.14 2.02	0.87	0.60	14.68 *	0.000
Lean Body Mass	Pre-Test Post-Test	43.50 41.83	6.39 5.49	1.67	0.27	6.23 *	0.000

The experimental group showed significant changes in body composition as shown in the Table-1. The calculated 't' values in the case of significant variables of experimental group percentage of body fat (11.20), total body fat (14.68), LBM (6.23) since the values obtained were greater than the tabulated value of 't'

value 2.14 with 14 degree of freedom at 0.05 level of significant. The probable reason attributed to the significant differences in the above mentioned parameters may be that the twelve weeks of SAQ combine training programme was sufficient to bring about significant changes in body composition.

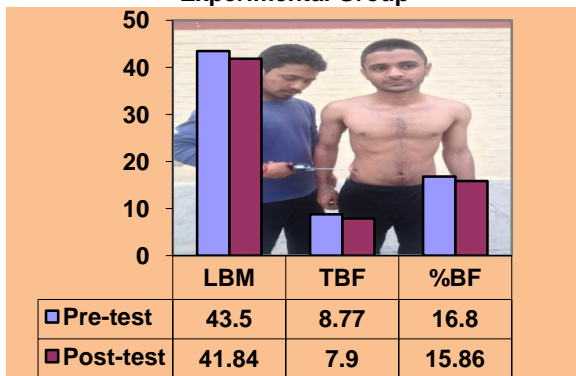
Table-2
Comparison of Pre-Test And Post-Test of Control Group with
Regard to Body Composition Among Male School Athletes

Variable	Testing Condition	Mean	SD	MD	SEM	't'	Sig.
Percentage of Body Fat	Pre-Test	17.55	3.42	0.04	0.03	1.04	0.316
	Post-Test	17.59	3.38				
Total Body Fat	Pre-Test	9.55	2.06	0.09	0.07	1.28	0.220
	Post-Test	9.64	2.00				
Lean Body Mass	Pre-Test	44.78	3.53	0.38	0.30	1.27	0.220
	Post-Test	45.16	3.37				

Table-2 indicates that there were no significant differences between pre-test and post-test on the variables of percentage of body fat, total body fat, lean body mass. The obtained t-values on body composition variables were insignificant since obtained t-value lesser than the critical value of 2.14 for degrees of freedom 14. It was observed that the mean gains and losses made from pre-test and post-test were statistically insignificant change with mean difference in percentage of body fat (0.04), total body fat (0.09), lean body mass agility (0.38).

Figure-4

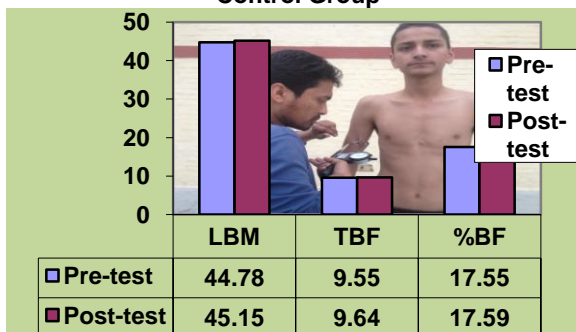
The Graphical Representation of Mean Scores
Pre-Test and Post-Test Measurements of
Experimental Group



LBM - Lean body mass, TBF- Total Body Fat, %BF- Percentage of body fat

Fig-5

The Graphical Representation of Mean Scores
Pre-Test and Post-Test Measurements of
Control Group



LBM - Lean body mass, TBF- Total Body Fat, %BF- Percentage of body fat

Conclusion

On the basis of the findings of the study, the following conclusions were framed:

1. The experimental group showed significant changes in percentage of body fat, total body fat, lean body mass.
2. No significant difference was found between pre-test and post-test of control group on body composition.
3. Twelve weeks SAQ combine training program has a positive impact on body composition.

References

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