IMPACT OF COMPOUND TRAINING AND CORE EXERCISES PROGRAM ON MAXIMUM STRENGTH AMONG COLLEGE TEAM SPORTS WOMEN

Dr. Seshagiri Rao Nallaka*

* Assistant Professor, A.S.N Women's Engineering College, Tenali, Guntur (DT), Andhra Pradesh.

ABSTRACT

The study was to examine the impact of compound training and core exercises program on maximum strength among sports women. Total N=80 sports women of various game college level age ranging from 19-23 years selected from A.S.N Women's Engineering College, Tenali, Guntur (DT), Andhra Pradesh. *The participated sports a woman was randomly assigned into four groups each group n=20 sports women i.e. empirical groups I underwent: Compound training [CTW], empirical group II underwent: Core exercises program [CEW], empirical group III underwent: combined compound training and core exercises program [CCW], and control group sports women [CSW]. CSW not participated in any specific training program. The training period was for 12- week's duration. The measurement was done by conducting deep squat test 1 RM weight in kilograms before and after the completion of training. The collected score's were analyzed by ANCOVA and level of significant was restricted at 0.05 levels. The study found that isolated, combined compound and core exercises program had positive significant impact to increase the 1 RM deep squat of empirical group's sports women comparative to control group sports women. Combined training is superior to isolated training for increasing 1 RM deep squat test.*

Keywords: – weight, compound, core, maximum and strength

Introduction:

Weight training or resistance training, involves the performance of physical exercises that are designed to improve strength and endurance. It is often associated with the lifting of weights. Strength training can increase muscle, tendon, and ligament strength as well as bone density, metabolism, and the lactate threshold; improve joint and cardiac function; and reduce the risk of injury in athletes

Core training refers to the targeted strengthening of the core muscles deep within the abdominals and back, attaching to the spine or pelvis. Some of these muscles include the transversus abdominis, the muscles of the pelvic floor, and the oblique muscles. These are mainly the straight and lateral abdominal muscles and the back muscles. The muscles support and protect the spine. It also connects the upper and lower body. A strong core is essential for a healthy body. The goal of core strengthening exercises is to train these muscles to work in harmony for improved balance and stability, maximizing power throughout the entire body.

Statement of the Research Problem:

To analyze the "compound training and core exercises program on maximum strength among sports women".

Research Hypothesis:

- There will be a significant increase in 1 RM deep squat test of empirical group's sports women after the twelve weeks impact of isolated, combined compound training and core exercises program when compared with control group sports women.

- The combined compound training and core exercise program will be superior to the isolated training.

Methodology:

The study was to examine the impact of compound training and core exercises program on maximum strength among sports women. Total N=80 sports women of various game college level age ranging from 19-23 years selected from A.S.N Women's Engineering College, Tenali, Guntur (DT), Andhra Pradesh. The participated sports a woman was randomly assigned into four groups each group n=20 sports women i.e. empirical groups I underwent: Compound training [CTW], empirical group II underwent: Core exercises program [CEW], empirical group III underwent: combined compound training and core exercises program [CCW], and control group sports women [CSW]. CSW not participated in any specific training program. The training period was for 12- week's duration. The measurement was done by conducting deep squat test 1 RM weight in kilograms before and after the completion of training. The collected score's were analyzed by ANCOVA and level of significant was restricted at 0.05 levels.

Table - I
Analysis of Covariance for Maximum Strength Performance on Pre Test and Post Test Data of CTW, CEW, CCW and CSW Groups Sports Women (In kgs)

GROUPS	CTW	CEW	CCW	CSW	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED 'F'
Pre Test Mean	33.90	33.85	33.90	34.80	Between	12.63	3	4.21	0.238
SD	4.78	4.34	3.95	3.65	Within	1345.35	76	17.70	
Post Test Mean	40.55	36.80	46.15	29.55	Between	2909.38	3	969.94	42.96*
SD	5.42	4.50	4.57	4.43	Within	1715.65	76	22.57	
Adjusted Post Test Mean	40.76	37.06	46.36	28.85	Between	3217.28	3	1072.42	243.20*
					Within	330.71	75	4.410	
Mean Diff	6.65	2.95	12.25	-5.25	-	-	-	-	-

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) =2.68, 3 and 75 (df) =2.68 *Significant

CTW : Compound training sports women group
CEW : Core exercise sports women group
CCW : Combined compound and core exercise sports women group
CSW : Control group sports women.

The above table-I shows that there is a significant difference on maximum strength among the four groups such compound training group sports women [CTW], core exercises program group sports women [CEW], combined compound training and core exercise program group sports women [CCW], and control sports women group [CSW]. Since the 'F' value required being significant at 0.05 level for 3 and 76 (df) =2.68, 3 and 75 (df) =2.68, but the computation values of maximum strength post and adjusted posttest 'F' values are 42.96 and 243.20 respectively. Which are greater than the tabulated value. Since the obtained 'F' ratio is found significant.

Table – II

SCHEFFE'S CONFIDENCE INTERVAL TEST FOR PAIRED ADJUSTED FINAL MEAN DIFFERENCES CTW, CEW, CCW and CSW GROUPS SPORTS WOMEN ON MAXIMUM STRENGTH PERFORMANCE

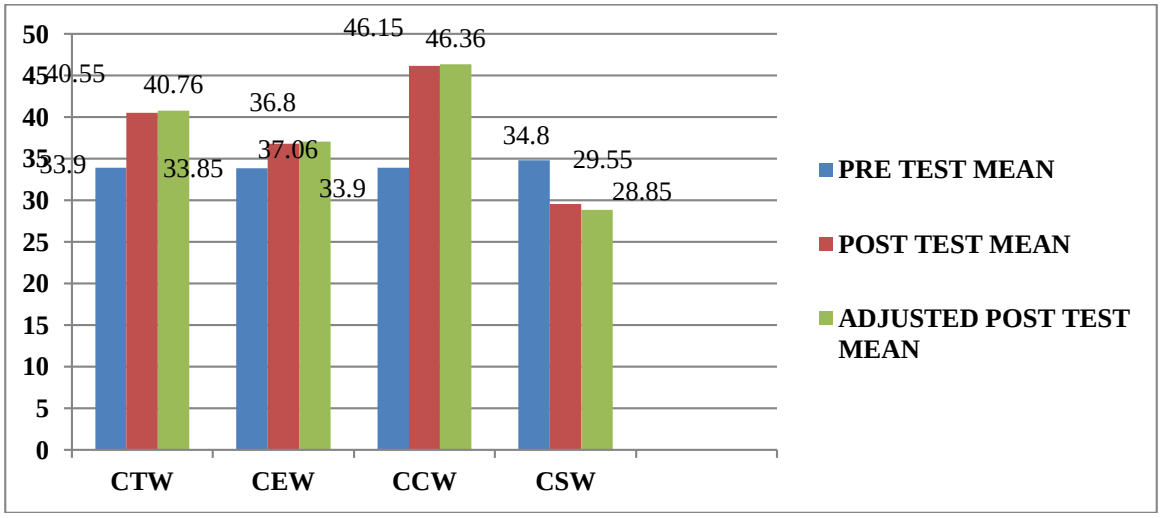
CTW	CEW	CCW	CSW	MD	CI
40.76	37.06	-	-	3.70*	1.87
40.76	-	46.36	-	5.60*	
40.76	-	-	28.85	11.91*	
-	37.06	46.36	-	9.30*	
-	37.06	-	28.85	8.21*	
-	-	46.36	28.85	17.51*	

*Significant

CTW : Compound training sports women group
CEW : Core exercise sports women group
CCW : Combined compound and core exercise sports women group
CSW : Control group sports women.

The above table II shows that significant differences present in between CTW and CEW, CTW and CCW, CTW and CSW, CEW and CCW, CEW and CSW & CCW and CSW are 2.70, 5.60, 11.91, 9.30, 8.21 and 17.51 respectively values is higher than 1.87.

The initial, final and adjusted final mean values of maximum strength score for the four group's namely CTW, CEW, CCW and CSW present in line graph for clear understand purpose in figure: 1



Discussion on Hypothesis:

- The first hypotheses stated that there will be a significant increase in 1 RM deep squat test of empirical group's sports women after the twelve weeks impact of isolated, combined compound training and core exercises program when compared with control group sports women. The statistical analysis proved that isolated, combined compound training and core exercises program significantly increased 1 RM deep squat test of empirical group's sports women. Hence research hypothesis accepted.

- The second hypotheses stated that combined compound training and core exercise program will be superior to the isolated training. The statistical analysis proved combined compound training and core exercise program is superior to isolated training. Hence research hypotheses accepted.

Discussion and Findings:

The study reported, on the bases of analysis table 1 &2 that isolated and combined twelve weeks training impact of combined compound training and core exercise program significantly increased maximum strength of sports women. The experimental studies on above finding were Fernando et al., (2013) proved that different resistance training volumes significantly increased the maximum strength of the college team sport athletes. Robinson et al., (1995) explore that 1-RM squat increased significantly with the impact of different weight training exercise/rest intervals. Mursel et al., (2015) concluded that 8-week of strength training program with elastic band had positive impact for increasing of one repetition maximum (1RM) method for bench press and squad. William et al., (2012) proved that short-term weightlifting and kettle bell training has positive impact for increasing legs strength.

Conclusions:

On the bases of analysis report table I and II, the study concluded that 12-weeks of isolated and combined compound training and weight training significantly increased the maximum strength of sports women. Further study shows that combined compound training and weight training is superior to isolated compound training and weight training for increasing 1 RM deep squat.

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