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EFFECT OF 12 WEEKS OF BRISK WALKING PROGRAMME ON ABDOMINAL MUSCULAR STRENGTH AND ENDURANCE OF SEDENTARY COLLEGE STUDENTS

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Abstract

The purpose of the present study is to find out effect of 12 weeks of brisk walking programme on abdominal muscular strength and endurance of sedentary college students**.** The sample was consisted of thirty (N 30) sedentary college students and their age ranged between 18-25 years of age .the subjects were briefed in details about the study. The criterion measures for the study was abdominal muscular strength and endurance and it was measured by modified sit-ups and scores recorded correctly executed sit-ups performed in 60 seconds. . The total research period was of 12 weeks out of which six (6 weeks) of brisk walking programme was employed. Mean difference was found in case first observation and second observation (MD=0.67, p=0.157), whereas significant difference is found in second and third observation (MD=4.03, p=0.000 , third observation and fourth observation (MD=1.87, p=0.000) and fourth and fifth observation (MD=1.77, p=0.000). We can, therefore, conclude that a brisk walking training program (6 week) elicits a statistically significant increase in Abdominal Muscular Strength Endurance.

Key Words: - Abdominal Muscular Strength and Endurance, Brisk Walking, Sedentary.

1. Introduction

In today's times, people are leading a very unhealthy lifestyle. Inadequate sleep, eating disorder, lack of proper regular exercise, increasing rate of obesity and other health diseases, shooting stress levels are some of the facts that define the contemporary world's lifestyle. It can be said that in the present era, human beings have got so engrossed in earning money, that they have virtually stopped paying attention to their physical and mental fitness. People do not realize the fact that money cannot buy them happiness. Brisk walking exercise has been proposed as a less expensive alternative, with a good clinical outcome when patients are frequently counselled by motivated, supportive physicians. However, brisk walking programmes mainly consist of endurance type exercise activities. As combined endurance and brisk walking exercise has been proposed as a less expensive alternative, with a good clinical outcome when patients are frequently counselled by motivated, supportive physicians. However, brisk walking programmes mainly consist of endurance type exercise activities. As combined endurance and resistance type exercise training has been reported to be of greater clinical benefit resistance type exercise training has been reported to be of greater clinical benefit. Thus the investigator interested in whether six weeks of brisk walking programme is effective in decreasing the fat percentage of sedentary college students.

2. Material and Methods

2.1 Subjects

For the purpose of the study thirty (N=30) male sedentary college students of Lucknow Christian College, Lucknow between 18 to 25 years of age were selected as subjects for the present study and the subjects were briefed in details about the study.

2.2 Selections of variables

Based on literary evidence, discussion with expert and scholar’s own understanding Abdominal muscular strength and Endurance was selected as variable for the present study.

2.3 Procedure

Periodisation of training and collection of data was showed in table 1.

Table- 1:*Periodisation of training and collection of data.*

Phase -1				Phase-2				Phase-3							
Training	Weeks	Days	Obs	Training	Weeks	Days	Obs	Training	Weeks	Days	Obs	Training	Weeks	Days	Obs
		1	A			22				43				64	
		2				23				44				65	
	1	3				24				45				66	
		4				25				46				67	
		5				26				47				68	
		6				27				48				69	
		7			4	28			7	49			10	70	
		8				29				50				71	
		9				30				51				72	
No		10		Brisk Walking		31		Brisk Walking		52		De		73	
		11				32				53				74	
		12				33				54				75	
		13				34				55				76	
	2	14			5	35			8	56			11	77	
		15				36				57				78	
		16				37				58				79	
		17				38				59				80	
		18				39				60				81	
		19				40				61				82	
		20				41				62				83	
	3	21	B		6	42	C		9	63	D		12	84	E

Note:- obs = observation

The Total research period was of 84 days. obs A=day1, obs B=21st day, obs C=42nd day, obs D=63rd day and obs E=84th day).

For the detail of training protocol interested person may contact to the author.

2.4 Administration of test

Abdominal Muscular Strength and Endurance

Test: - The Modified Sit-Up Test.

Equipment required: - Mat and stop watch.

Procedure:-The abdominal muscular strength and endurance was measured by modified sit-up test. The subject were lie on his back with his knees flexed, feet flat on floor, and heels between 12 and 18 inches from the buttocks. Crossed his hands over his chest with the hands on opposite shoulders. Partner holds his feet to keep them in touch with the floor. Curl to the sitting position; arm contact with the chest must be maintained, and the chin should remain tucked to the chest. The sit-up is completed when his elbows touch thighs. Return to the starting position until his mid-back contacts the floor. His partner gives the signal "**Ready, Go**" The subject started on the word "Go" and ceases on the word "Stop".

Scoring: - score is number of correctly executed sit-ups performed in 60 seconds.

2.5 Statistical Analysis

To determine the level of abdominal muscular strength and endurance, descriptive statistics was applied. To determine the effect of brisk walking on abdominal muscular strength and endurance in sedentary college students one factor repeated measures analysis of variance was used to compute the data.

3. Findings

The findings and discussion of findings with regard to the present study have been presented in two sections. Section one deal with the mean and standard deviation of Abdominal muscular strength and endurance. Section two deals with the one factor repeated measures Analysis of variance of Abdominal muscular strength and endurance.

SECTION ONE

Mean and Standard deviation of Abdominal Muscular Strength and Endurance

Table-2

Variable	Observation									
	obs A		obs B		obs C		obs D		obs E	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Abdominal Muscular Strength & Endurance(No)	**26.86**	5.87	**26.20**	5.70	**30.23**	6.02	**32.10**	5.88	**30.33**	5.57

The Mean of Abdominal muscular strength and endurance in Table-2 shows that there was slight decrease in Abdominal muscular strength and endurance from observation one to observation second (**obs A 26.86**, **obs B 26.20**, whereas after second observation to fourth observation there was sequential increase in Abdominal muscular strength and endurance till the training phase **obs C 30.23**, **obs D 32.10)**. Whereas at obs E of detraining phase there was slight decrease in abdominal muscular strength and endurance 30.33.

SECTION TWO

The findings pertaining to brisk walking one factor repeated measure analysis of variance was computed and data pertaining to that have been presented in tables.

Mauchly's Test of Sphericity for Abdominal Muscular Strength and Endurance presented in Table- 3

Table-3
Mauchly's Test of Sphericity for Abdominal Muscular Strength and Endurance

Within Subjects Effect	**Mauchly's W**	**Approx. Chi-Square**	**Df**	**Sig.**	**Epsilon**		
					Greenhouse-Geisser	**Huynh-Feldt**	**Lower-bound**
Observation	.375	26.876	9	0.001	.637	.704	.250

The above table reveals that the Mauchly's Test of Sphericity was significant $X^2(9) = 26.88$, p=0.001 ,(i.e has a probability value less than 0.05) and it is concluded that there was significant variance of difference and thus the condition of Sphericity has been violated. Further, as the value of Epsilon of Greenhouse-Geisser correction was less than 0.75, therefore in test within subject effect, Greenhouse-Geisser value of 'F' was taken into consideration.

One Factor Repeated-Measure Analysis of Variance of Abdominal Muscular Strength Endurance presented in Table -3.1

Table-3.1
One Factor Repeated-Measure Analysis of Variance for Abdominal Muscular Strength Endurance

Source	**SS**	**Df**	**MS**	**F**	**P**
Between-Subject	4729.57	29	163.08		
Within-Subject					
Observation	755.77	2.55	296.38	128.30	.000*
Subject x Observations	171.42	73.94	2.31		

*Sig. at 0.05 level of confidence, (F (2.55, 73.94) =128.30, $P < 0.000$).

Mauchly's test indicated that the assumption of Sphericity had been violated, $X^2(9) = 26.88$, p = 0.001, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity (ε =0.64). The results show that there was significant effect of brisk walking on abdominal muscular strength and endurance, (F (2.55, 73.94) =128.30, $P < 0.000$).

Pair wise Comparison of observations in relation to Abdominal Muscular Strength Endurance presented in Table-3.2.

Table-3.2
Pair Wise Comparison of observations in relation to Abdominal Muscular Strength Endurance

(I) Observation	(J) Observation	Mean Difference (I-J)	Sig.[a]
1) 26.86	2) 26.20	**0.67**	**0.157**
2) 26.20	3) 30.23	**4.03***	**0.000**
3) 30.23	4) 32.10	**1.87***	**0.000**
4) 32.10	5) 30.33	**1.77***	**0.000**

*Significant at 0.05 level of confidence.

a:- Adjustment for multiple comparison:Bonferroni

Post hoc tests using the Bonferroni correction revealed that insignificant difference was found in case first observation and second observation (MD=0.67, p=0.157), whereas significant difference is found in second and third observation (MD=4.03, p=0.000) , third observation and fourth observation (MD=1.87, p=0.000) and fourth and fifth observation (MD=1.77, p=0.000). We can, therefore, conclude that a brisk walking training program (6 week) elicits a statistically significant increase in Abdominal Muscular Strength Endurance.

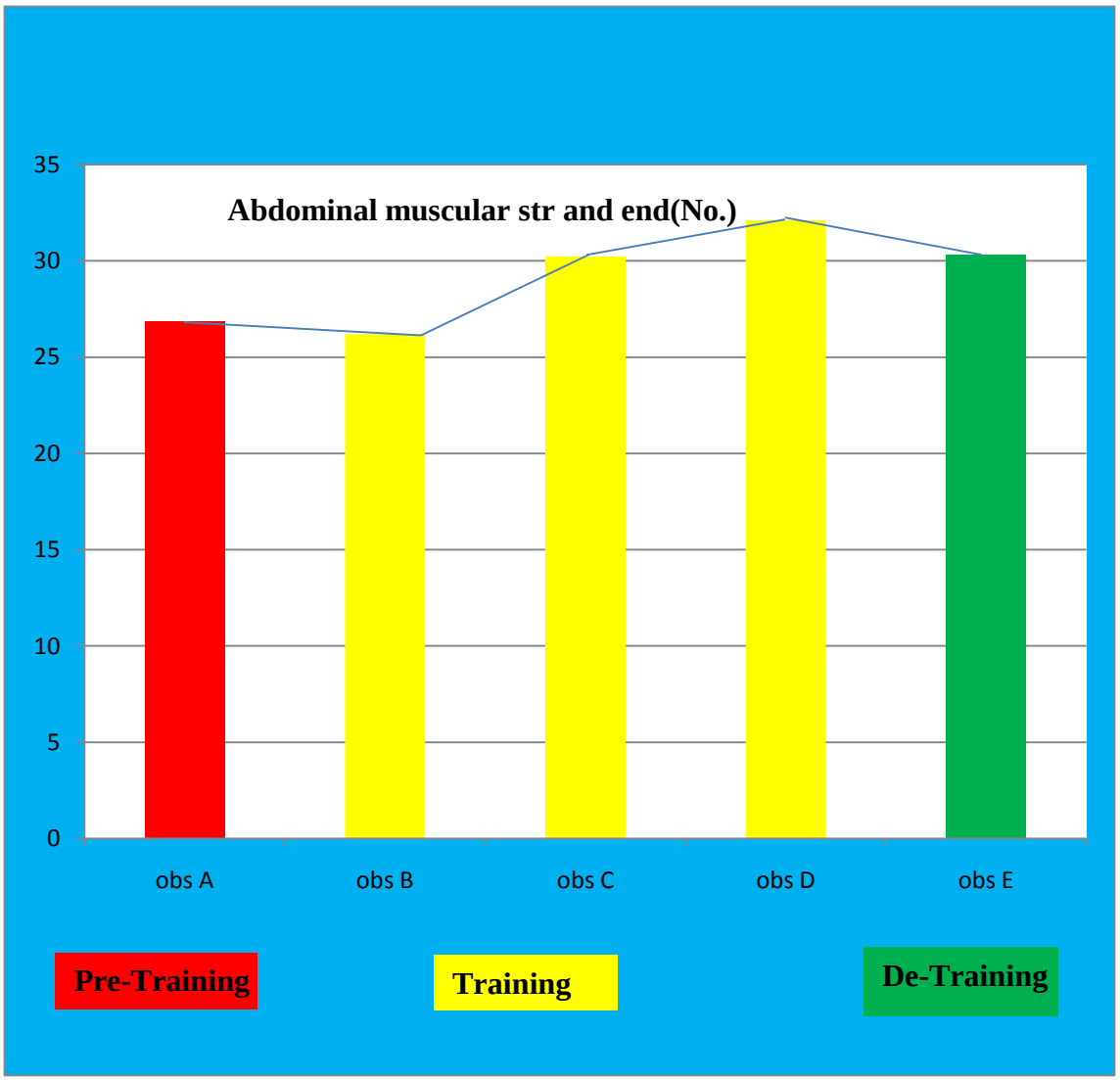

Figure: - 1 Graphical representation of means on repeated observations in relation to Abdominal Muscular Strength and Endurance (No.).

4. Discussion on Findings

It was observed from the mean of Abdominal muscular strength and endurance in table-7 that there was slight decrease in Abdominal muscular strength and endurance from observation one to observation second (**obs A 26.86**, **obs B 26.20**, whereas after second observation to fourth observation there was sequential increase in Abdominal muscular strength and endurance till the training phase **obs C 30.23**, **obs D 32.10)**. Whereas at obs E of detraining phase there was slight decrease in abdominal muscular strength and endurance 30.33. mean abdominal muscular strength and endurance differed statistically significantly between Observation points (F (2.55, 73.94) = 128.30, $P <$ 0.000), insignificant difference was found in case first observation and second observation (MD=0.67, p=0.157), whereas significant difference is found in second and third observation (MD=4.03, p=0.000), third observation and fourth observation (MD=1.87, p=0.000) and fourth and fifth observation (MD=1.77, p=0.000). We can, therefore, conclude that a brisk walking training program (6 weeks) elicits a statistically significant increase in Abdominal Muscular Strength Endurance.

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