(October – December, 2013)



GLOBAL JOURNAL OF BIOLOGY, AGRICULTURE & HEALTH SCIENCES (Published By: Global Institute for Research & Education)

www.gifre.org

IMPACT OF BRISK WALKING PROGRAMME ON UPPER BODY MUSCULAR STRENGTH OF SEDENTARY COLLEGE STUDENTS

Dr.K.M.Valsaraj

Associate Professor & Head, Department of Physical Education, Lucknow Christian College, Lucknow.

Abstract

The purpose of the present study was to investigate the impact of brisk walking programme on upper body muscular strength 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 upper body muscular strength and it was measured by pull-ups and scores recorded correctly executed pull-ups in numbers. The total research period was of 12 weeks out of which six (6 weeks) of brisk walking programme was employed. There was insignificant difference was found in case first observation and second observation (MD=0.17, p=1.00), whereas significant difference was found in second and third observation (MD=0.43, p=0.00), once again a insignificant difference was found in fourth observation (MD=1.07, p=0.00). We can, therefore, conclude that a brisk walking training program (6 week) elicits a statistically significant increase in Upper Body Muscular Strength (Pull-ups).

Key Words: - Upper Body Muscular Strength, 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. Brisk walking essentially means walking at a fast pace. It is believed that walking briskly burns almost as many calories as running or jogging for the same distance, and poses less risk for injury. Brisk walking is also considered aerobic activity. No unpleasant side effects either. One might be wondering if there are any disadvantages. According to Mason (2010) "If everyone were to walk briskly, 30 minutes a day, we could cut the incidence of many chronic diseases by 30-40%."According to Hastad & Lacy (1994), "The health related physical fitness domain is characterized by those aspects of physical fitness that affect on individual's functional health & physical well being. It is becoming an accepted practice for physical fitness testing to emphasize health related components, including body composition (ratio of leanness to fatness), cardiovascular efficiency, muscular strength and endurance and flexibility of lower back and posterior thigh area". Thus the investigator interested to find out whether the brisk walking programme is effect for the upper body muscular strength 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 investigator's own understanding upper body muscular strength was selected as variable for the present study.

2.3 Procedure

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

(October – December, 2013)

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



Note:- obs = observation

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

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

2.4 Administration of test

Upper-Body Muscular Strength.

Test:-Pull-up Test.

Equipments required: - A horizontal bar positioned at a height that allows the student to hang without touching the ground.

Procedure:- The bar was be adjusted to a height that permitted the students to hang free from the floor from the hanging position with an overhand grip (palm forward), the body is pulled upward until the chin rests over the bar, and then lowered until the arms are straight. This movement was repeated to exhaustion. The student was not allowed to kick, jerk, or use a "kip" movement.

Scoring: The students score was the number of correctly executed chins.

2.5 Statistical Analysis

To determine the level of upper body muscular strength, descriptive statistics was applied. To determine the effect of brisk walking on upper body muscular strength 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 upper body muscular strength. Section two deals with the one factor repeated measures Analysis of variance of upper body muscular strength.

Section One

	Observation									
	obs A		obs B		obs C		obs D		obs E	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Upper Body Muscular Strength (No)	4.63	1.82	4.80	1.47	5.50	1.47	5.93	1.41	4.86	1.25

Table-2: Mean and Standard deviation of upper body muscular strength.

It was observed from the mean of Upper body muscular strength (Pull-ups) in Table-2 that there was sequential increase of Upper body muscular strength and endurance (Pull-ups) from observation one to four (**obs A 4.63**, obs **B 4.80**, obs **C 5.50**, obs **D 5.93**). Whereas at obs E 4.86 of detraining phase there was slight decrease in the mean of upper body muscular strength (Pull-ups).

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.

					Epsilon		
Within Subjects Effect	Mauchly's W	Approx. Chi- Square	Df	Sig.	Greenhouse- Geisser	Huynh-Feldt	Lower-bound
Observation	.600	14.004	9	0.123	.804	.916	.250

Table-3: Mauchly's Test of Sphericity for Upper Body muscular Strength (Pull-ups).

The above table reveals that the Mauchly's Test of Sphericity was insignificant $X^2(9) = 14.004$, p=0.123, (i.e. has a probability value greater than 0.05) and it is concluded that there was no significant variance of difference and thus the condition of Sphericity has not been violated. Therefore in test within subject effect, Sphericity assumed value of 'F' was taken into consideration.

Table-3.1: One Factor Repeated-Measure Analysis of Variance for Upper-body Muscular Strength (Pull-ups)

Source	SS	Df	MS	F	Р
Between-Subject	281.97	29	9.72		
Within-Subject					
Observation	36.17	4	9.04	22 79	000*
Subject x Observations	44.62	116	.38	23.10	.000*

*Sig. at 0.05 level confidence, (F (4, 116) = 23.78, P < 0.000).

Mauchly's test indicated that the assumption of Sphericity has not been violated, $X^2(9) = 14.004$, p = 0.123, the results show that there was significant effect of brisk walking on upper body muscular strength, (*F* (4, 116) = 23.78, *P* < 0.000).

Table-3.2:Pair Wise Comparison of observations in relation to Upper Body Muscular Strength (Pull-ups).

(I) Observation	(J) Observation	Mean Difference (I-J)	Sig. ^a
1) 4.63	2)4.80	0.17	1.00
2) 4.80	3) 5.50	0.70*	0.00
3) 5.50	4) 5.93	0.43*	0.07
4) 5.93	5) 4.86	1.07 *	0.00

*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=0.17, p=1.00), whereas significant difference was found in second and third observation (MD=0.70, p=0.00), once again a insignificant difference was found in third observation and fourth observation (MD=0.43, p=0.07) and once again significant difference was found in fourth and fifth observation (MD=1.07, p=0.00). We can, therefore, conclude that a brisk walking training program (6 week) elicits a statistically significant increase in Upper Body Muscular Strength (Pull-ups).



Figure: -5 Graphical representations of means on repeated observations in relation to Pull-ups (No).

4. Discussion on Findings

Mean of Upper body muscular strength (Pull-ups) in table-7 showed that there was sequential increase of Upper body muscular strength and endurance (Pull-ups) from observation one to four (**obs A 4.63**, **obs B 4.80**, **obs C 5.50**, **obs D 5.93**). Whereas at obs E of detraining phase there was slight decrease in Upper body muscular strength and endurance (Pull-ups) 4.86. Mean Pull ups differed statistically significantly between Observation points (F (4, 116) = 23.78, P < 0.000), insignificant difference was found in case first observation and second observation (MD=0.17, p=1.000), whereas significant difference was found in second and third observation (MD=0.70, p=0.000), once again a insignificant difference was found in third observation (MD=0.43, p=0.07) and once again significant difference was found in fourth and fifth observation (MD=1.07, p=0.000). We can, therefore, conclude that a brisk walking training program (6 weeks) elicits a statistically significant increase in Upper Body Muscular Strength (Pull-ups).

References

Anderson C.L., Schook Health Practice 4th Edition (saint loius : The C.V. Mosby company, 1968), p. VII.

Arstand Pre-olouf and Rodahl Kaare, "Test Book of Work Physiology", New Delhi: Mcgraw Hill Kagakusha Ltd. 1970.

Clarke, H. Harrison and David, H. Clarke. "Application of Measurement to Physical Education." Englewood Cliffs, N.J.: Prentice Hall inc. 1987.

Hastand Dougla N. & Lacy Alan C., "Measurement and Evaluation in Physical Education and Exercise", 2nd Edition,(Arizon:Gorsuch Searisbrick,1994),p.26.

Johnson Barry L. and Jack K. Nelson (1982), Practical Measurement of Evaluation in Physical Education (3ed) Delhi: Surjeet Publications

MasashietalMiyashita."Accumulating short bouts of brisk walking reduces postprandialplasma triacylglycerol concentrations and resti ng bloodpressure in healthy young men'The American Journal of Clinical Nutrition, November 2008 88: 1225-1231.

Mayer Casey, "Walking a complete guide to complete exercise" p.cmBallantine Books Trade Paperback Edition, New York 2007.p.68.

Mendes R, Sousa N and Barata.J L "Physical activity and public health: recommendations for exercise prescription" Acta Med Port. 2011 Nov-Dec; 24(6):1025-30. Epub 2012 Feb 20.

Michael Y L, Carlson N E. "Analysis of Individual Social-ecological Mediators and Moderators and Their Ability to Explain Effect of a Randomized Neighborhood Walking Intervention", Int J Behav Nutr Phys.

Paul A Ford, Gill Perkins & Ian Swaine, et al. "Effects of a 15-week accumulated brisk walking programme on the body composition of primary school children" Journal of Sports Sciences 18 Sep 2012;1-9.

Thomas Jerry R, Nelson Jack k and Silverman Stephen J. "Research Method in Physical Activity", Fifth Edition 2005.