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Effect of Walking with and without Load Intermittent Walking on Cardio Respiratory Endurance Muscular Strength and Muscular Endurance of Adolescent Boys

S. Yoganandaan
Ph.D. Research Scholar, Department of Physical Education, Karpagam University, Coimbatore, India
Dr. V. Perumal
Professor, Department of Physical Education, Karpagam University, Coimbatore, India

Abstract:
The purpose of the present investigation was to find out the effects of walking with and without load intermittent walking on selected metabolic health fitness outcomes of adolescent boys. To achieve this purpose sixty (N=60) male college students were randomly selected as subjects from Bangalore University affiliated college in this academic year 2013-14. The selected subjects were ranged between 18-25 years. The selected subjects were divided into three equal groups Such as Walking without Load, Walking with load and Combination of walking with and without Load. Each group consists of 20 subjects. The selected variables were used in this study are Cardio respiratory endurance, Muscular strength and Muscular endurance. Each and assigned to Experimental group-I underwent Walking without load Experimental group-II underwent Walking with load and Experimental group-III underwent Combination of Walking with and without load. They assessed before and after the training period of twelve weeks. The analysis of covariance was used to find out the significant pre and post mean difference between the groups to analysis the data. The study revealed that the above said variables were significantly improved due to the influence of Walking without Load, Walking with load and Combination of walking with and without Load.

Keywords: *walking without load, walking with load and combination of walking with and without load, cardio respiratory endurance, muscular strength, and muscular endurance*

1. Introduction

Anderson et.al., (2006) examined the effects of an 8-week program of regular brisk walking, regular brisk walking with abdominal electrical muscle stimulation (EMS), and no exercise on hierarchical self-perceptions, and consider the mediating role of changes in anthropometric measures and body composition. Thirty-seven sedentary healthy women (mean age ¼ 38.1; SD ¼ 9.3) provided written informed consent and participated in baseline testing on a range of anthropometric, body composition, and hierarchical self-perception measures. Subsequently participants were randomly assigned to an 8-week program of walking (n ¼ 13), walking+EMS (n ¼ 14), or a control (n ¼ 10) condition. At 8 weeks anthropometric, body composition and self-perception measures were re-assessed. In comparison with the control group, both walking groups had significant reductions in a number of anthropometric measures and improvements in self-perception measures. The improvements on both anthropometric measures and self-perceptions were greater for the walking+EMS condition, which indicated that changes in self-perception might be mediated by body changes. However, an assessment of the mediation effect between changes in anthropometric measures and self-perception changes did not support this finding. Boone-Heinonen et.al., (2010) in this systematic review, walking (a generally accessible activity for a largely sedentary population), was assessed as a preventive risk factor for development of fatal and nonfatal cardiovascular disease (CVD). Generally, there were dose-dependent reductions in CVD risk with higher walking duration, distance, energy expenditure, and pace. Associations appeared to be stronger for ischemic stroke than other CVD outcomes such as CHD or hemorrhagic stroke. Adjustment for clinical CVD risk factors, obesity, or other types of physical activity generally attenuated but did not eliminate associations. Because functional status may be an important determinant of walking behavior in adults, potential bias due to pre-existing illness is of concern in all studies reviewed, particularly in case-control studies which ascertain walking retrospectively and yielded the strongest associations. Study findings were consistent with current physical activity recommendations, but opportunities for future research include improvements in measurement of walking and other CVD risk factors, more thorough control for pre-existing illness, examination of mediating or moderating conditions such as obesity, and other analytical issues.

Walking provides a wide range of benefits, some of which are more obvious than others. It is the most often indicated physical activity modality to increase population physical activity levels aiming to improve health-related conditions. Most people walk every day but

it is often overlooked as an exercise activity. Walking is one of the easiest, and cheapest, ways to improve fitness. It is a light cardiovascular exercise, which means it improves the condition of one heart and lungs. It is also a weight bearing activity, meaning that it will help to improve bone density. Walking works the muscles of lower body while being low impact, which means it, does not put stress on joints. Walking can be done anywhere, try walking up and down hills for a moderate form of exercise. He could also try power walking, which is fast walking that uses more energy than running at the same pace. Walking is one of the easiest and least expensive ways to stay physically fit. It's also a versatile form of exercise that can be done indoors (many malls and public buildings offer walking routes) or outdoors, and one can tailor the intensity of exercise based upon individual abilities and goals. Whether like to begin walking for exercise or if already established in the habit, these tips can help get the most from workout. Walking is one of the least expensive and most broadly accessible forms of physical activity. It is rarely associated with physical injury and can easily be adopted by people of all ages, including those who have never participated in physical activity. Studies have shown that walking has higher levels of adherence than other forms of physical activity, possibly because it is convenient and overcomes many of the commonly perceived barriers to physical activity: lack of time, lack of fitness or lack of skill. Walking is currently the most popular form of physical activity in the world, with studies from the United Kingdom and United States demonstrating that the prevalence of walking is two to three times higher than those of the next most frequently reported activities.

2. Methodology

The purpose of the study was to find out the effect of varied methods of exercise on selected metabolic health fitness outcomes in untrained adult men. To achieve this purpose sixty (N=60) male college students were randomly selected as subjects from Bangalore University affiliated college in this academic year 2013-14. The selected subjects were ranged between 18-25 years. The selected subjects were divided into three equal groups Such as Walking without Load, Walking with load and Combination of walking with and without Load. Each group consists of 20 subjects. The selected variables were used in this study are Cardio respiratory endurance, Muscular strength and Muscular endurance. The subjects were tested the above mentioned variables by using standardized test and consider as pre test score. Three experimental groups were undergone for respective training programs. Each and assigned to Experimental group-I underwent Walking without load Experimental group-II underwent Walking with load and Experimental group-III underwent Combination of Walking with and without load. The total duration of the training period was fixed for 12 weeks. After the completion of training period all the subjects were tested selected variables by using standardized test and consider as post test score.

3. Results and Discussion

		Source of variance	Sum of squares	df	Mean square	F-value
Cardio Respiratory Endurance	**Pre-test**	BG	31.31	2	15.65	0.75
		WG	1191.50	57	20.90	
	Post-test	BG	763.00	2	381.50	22.06*
		WG	985.85	57	17.30	
	Adjusted Mean	BG	858.05	2	429.03	29.70*
		WG	808.96	56	14.45	
Muscular Strength	**Pre-test**	BG	30.10	2	15.05	2.45
		WG	349.50	57	6.13	
	Post-test	BG	1022.23	2	511.12	93.27*
		WG	312.35	57	5.48	
	Adjusted Mean	BG	828.86	2	414.43	115.35*
		WG	201.20	56	3.59	
Muscular Endurance	**Pre-test**	BG	19.73	2	9.87	2.54
		WG	221.20	57	3.88	
	Post-test	BG	416.10	2	208.05	40.82*
		WG	290.50	57	5.10	
	Adjusted Mean	BG	463.95	2	231.97	70.88*
		WG	183.28	56	3.27	

Table 1: Analysis of co-variance on cardio respiratory endurance, Muscular Strength and Muscular Endurance of Walking without Load, Walking with load and Combination of walking with and without Load
**significant level 0.05 level (3.16)*

Variables	Walking without load	Walking with load	Combination of Walking with and without load	Mean difference	C.V
Cardio Respiratory Endurance	27.24	32.17	……..	4.93*	3.02
	27.24	……..	36.61	9.37*	
	……..	32.17	36.61	4.44*	
Muscular Strength	12.54	18.48	……..	5.94*	1.50
	12.54	……..	21.74	9.2*	
	……..	18.48	21.74	3.26*	
Muscular Endurance	15.70	19.64	……..	3.94*	1.44
	15.70	……..	22.56	6.86*	
	……..	19.64	22.56	2.92*	

Table 2: Scheffe's post hoc test for the difference between the adjusted post test means on cardio respiratory endurance, muscular strength and muscular endurance of walking without load, walking with load and combination of walking with and without load

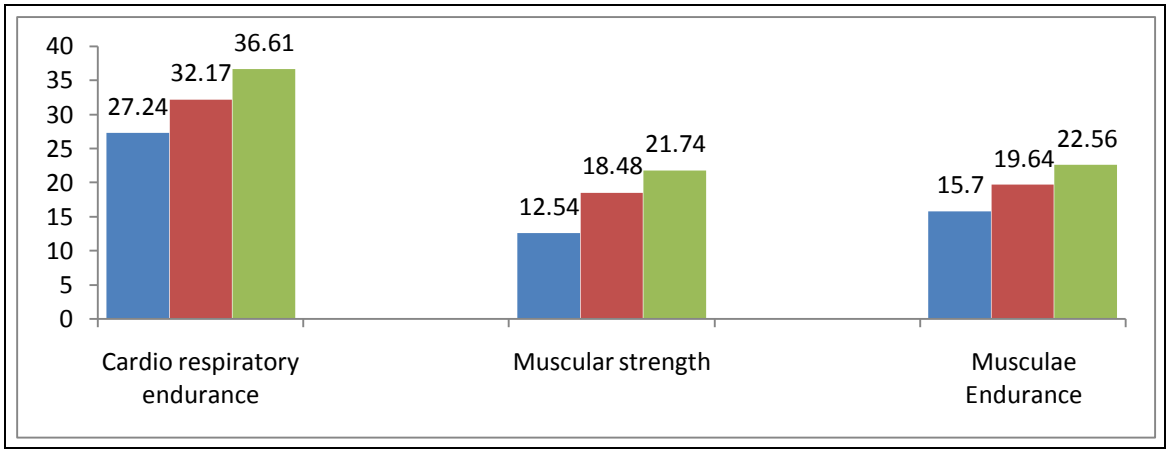

Figure 1: Bar diagram showing the mean values of pre-test, post-test and adjusted post test means on cardio respiratory endurance, muscular strength and muscular endurance of walking without load, walking with load and combination of walking with and without load

4. Conclusion

Based on the results of the study the following conclusion will be drawn.

1. It was concluded that the effect of walking without load, Walking with load and combination of Walking with and without load showed significant improvement on selected metabolic health fitness outcomes in untrained adult men
2. It was further concluded that Combination of walking with and without load group showed greater improvements in cardio respiratory endurance, muscular strength, and muscular endurance when compare to walking without load and walking with load group.
3. It was further concluded that walking with load group showed greater improvements in cardio respiratory endurance, muscular strength, and muscular endurance when compare to walking without load.

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