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Effect of Dynamic Walking With Load, Static Walking With Load and Walking Without Load on Body Composition of Adolescent Boys

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Abstract – The purpose of this study was to determine the effect of three types of activities of Dynamic walking with load, Static walking with load and walking without load training on Body composition of adolescent boys. Sixty subjects (N=60) were selected from Bangalore urban schools at random. The selected subjects were ranged between 14 and 17 years. The selected subjects were randomly divided into four equal groups consisting of fifteen subjects in each group. Static walking with Load Group was assigned as Experimental Group – I (SWLG), Dynamic Walking with Load Group was assigned as Experimental group II (DWLG), Walking without Load Group (WWLG) was assigned as Experimental Group –III and group-IV without any intention was assigned as Control Group (CG).The following variable namely body composition was selected as criterion variable. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to fund out the significant difference, if any among the groups. Whenever they obtained "F" ratio was found to be significant, the Scheffe's test was applied as post hoc test to find out the paired mean difference, if any. The 0.5 level of confidence was fixed to test the level of significance which was considered as an appropriate. It was concluded that static walking with load group, dynamic walking with load group and walking without load groups significantly improved the body composition after the training.

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INTRODUCTION

Most healthy adults tend to naturally select a walking pace of approximately 2.8 mph. Willis and colleagues have found that the preferred walking speed might also be due to changes in fuel utilization. In most adults, fat is the primary fuel source at speeds equal to and below 2.8 mph, which serves as a metabolic walking threshold speed. Above this speed, carbohydrate oxidation (breakdown) abruptly increases resulting in an increased perception of effort, due to carbohydrates being a limited fuel source as compared to fat. As a result, preferred walking speed appears to be naturally selected due to the most economical fuel conditions in the muscle, in which fat oxidation is the primary fuel source.

A person's natural walking speed is habitually determined by the central nervous system's valuation of the most economical walking gait for optimal fat fuel utilization.

Walking programs are a most common form of exercise advocated by exercise professionals due to the simplicity of the exercise, low participation cost, and numerous health benefits.

Weighted vests or backpack are a type of exercise equipment that is gaining attention from exercise professionals and fitness enthusiasts. Backpack or weighted vests (typically 5% to 20% of a person's body weight) can be used in many different types of workouts and most vests are adjustable to add more or less weight as needed. Additionally, weighted vests are worn over the shoulders making them a more natural addition to an exerciser's center of gravity. (Puthoff and associates (2006).

BODY COMPOSITION

Body composition considers the amount of fat weight and fat-free (muscle, bone, organ) weight that makes up physique. This is in contrast to judging physical make-up solely on what the weight scale registers as body weight. Thus, body composition is a more effective way to determine health and fitness status. Two factors that have a profound effect on body composition are dieting and exercise (Baechle and Groves, 1992). This was true of all activities in which a body weight had to be moved either vertically or horizontally through space. Many players are having a strong notion that they must be big to be good in their game. Size has been associated with the quality of the player's performance; the bigger the player, the better the performance. It is now recognized that this

is true only if the size increase is due to an increase in the lean tissue. Increased lean weight may prove to be a major detriment to successful performance of any player.

METHODOLOGY

The purpose of this study was to determine the effect of three types of activities of Dynamic walking with load, Static walking with load and walking without load training on Body composition of adolescent boys. Sixty subjects (N=60) were selected from Bangalore urban schools at random. The selected subjects were ranged between 14 and 17 years. The selected subjects were randomly divided into four equal groups consisting of fifteen subjects in each group. Static walking with Load Group was assigned as Experimental Group – I (SWLG), Dynamic Walking with Load Group was assigned as Experimental group II (DWLG), Walking without Load Group (WWLG) was assigned as Experimental Group –III and group-IV without any intention was assigned as Control Group (CG).The following variable namely body composition was selected as criterion variable. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to fund out the significant difference, if any among the groups. Whenever they obtained "F" ratio was found to be significant, the Scheffe's test was applied as post hoc test to find out the paired mean difference, if any. The 0.5 level of confidence was fixed to test the level of significance which was considered as an appropriate.

RESULTS

Table I

COMPUTATION OF ANALYSIS OF COVARIANCE OF PERCENT OF BODY FAT (Scores in percentage)

Mean	SWLG	DWLG	WWLG	CG	SV	SS	DF	MS	F
PRE TEST	12.94	12.31	12.23	12.75	B	5.24	3.00	1.75	1.08
					W	90.70	56.00	1.62	
POST TEST	11.38	10.52	12.36	13.96	B	98.31	3.00	32.77	18.65*
					W	98.42	56.00	1.76	
ADJUSTED	11.32	10.56	12.42	13.93	B	96.18	3.00	32.06	18.45*
					W	95.57	55.00	1.74	
MEAN DIFF.	-1.56	-1.80	0.13	1.22					

Table F ratio at 0.05 level of confidence for 3 and 56 (df) and 3 and 55 df was 2.77

As shown in table I the obtained F value on the scores of the pretest means 1.08 was less than the required value, which proved that the random assignment of the subject were successful and their scores in **percent of body fat** before the training were equal and there was no significant difference among the groups.

The analysis of posttest means prove that obtained F value 18.65 was greater than the required value of 2.77 to be significant at 0.05 level.

The adjusted posttest means analysis resulted an obtained F value of 18.45 which was greater than the required value of 2.77. Hence the results revealed that there was a significant difference among the four groups one **percent of body fat** which prompted the investigator to process further with Scheffe's post hoc test.

Since significance differences were recorded, the result was subjected to post hoc analysis using Scheffe's confidence interval test. The result were presented in table II

Table II

Scheffe's confidence interval test scores on percent of body fat (Scores in percentage)

SWLG	DWLG	WWLG	CG	MD	CI
11.32	10.56			**0.76**	
11.32		12.42		**1.10**	
11.32			13.93	**2.61***	1.39
	10.56	12.42		**1.86***	
-	10.56		13.93	**3.37***	
		12.42	13.93	**1.51***	

*Significant at 0.05 level of confidence

From the table II, it was proved that there were significant differences between static walking with load training group, dynamic walking with load training group and walking with load training group. Dynamic walking with load training group had significant improvement on **percent of body fat** then walking without load training group, and all the three training groups had significant improvement then the control group.

CONCLUSION

It was concluded that static walking with load group, dynamic walking with load group, walking without load group significantly improved the body composition after the training. It was concluded that there was a significant difference between the training groups namely Static walking with Load Group, Dynamic Walking with Load Group, Walking without Load Group on improving the body composition.

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