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EFFECT OF MULTIGYM TRAINING ON SELECTED HEALTH RELATED FITNESS COMPONENTS AMONG ADULT MEN

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Abstract

The purpose of the study was to determine the effect of multigym training on selected health related fitness components among adult men. To achieve the purpose of the study, thirty adult men were selected from Chennai. The selected subject's age groups were ranging from 25 and 35 years. The subjects were randomly divided into two groups and each group consists of fifteen subjects. Group one acted as experimental group I and Group two acted as control group. The experimental group underwent their respective training programme namely multigym training for three days per week for a period of 6 weeks and control group underwent their routine work. The dependent variables were cardiorespiratory endurance, muscular strength, flexibility and body composition. The obtained pre and post data were statistically analyzed using ANCOVA. In all cases the level of significance fixed was 0.05. The results proved that there was a significant improvement due to 6 weeks multigym training on cardiorespiratory endurance, muscular strength, flexibility and body composition among adult men.

Key words: *Cardiorespiratory Endurance, Muscular Strength, Flexibility, Body Composition and Adult men.*

Introduction

Resistance training offers greater development of muscular strength, endurance, and mass. It also assists in the maintenance of basal metabolic rate promotes independence, and helps to prevent falls in the elderly **(Pratley, 1994)**. Resistance training is particularly beneficial for improving the function of most cardiac, frail, and elderly patients, who benefit substantially from both upper- and lower-body exercise **(Pollock, 1996)**. Resistance training can be beneficial in the prevention and management of other chronic conditions, eg, low back pain, osteoporosis, obesity and weight control, sarcopenia, diabetes mellitus, susceptibility to falls, and impaired physical function in frail and elderly persons, as well as in the prevention of and rehabilitation from orthopaedic injuries **(Lippincott Williams & Wilkins, 2000).** Resistance training can be accomplished with traditional free weights and dumbbells, weight machines, body weight, elastic tubing, medicine balls, or even common household products like milk jugs filled with sand or soup cans. The choice to incorporate a certain type of resistance depends on level of physical fitness, how familiar a person is with specific exercise movements, and individual goals **(Michael R. Esco, 2013).** In this regard, the purpose of this study was to investigate the effect of multigym training on selected health related fitness among adult men.

Methodology

To achieve the purpose of the study thirty adult men were randomly selected from Chennai district. The subject's age were ranged between 25-35 years. They were divided into two equal groups and each group contains fifteen subjects. Group one acted as

experimental group and they underwent multigym training for a period of 6 weeks for three days per week and group two acted as control group. The dependent variables selected for this study were such as cardiorespiratory endurance, muscular strength, flexibility and body composition. The above selected variables were tested through cooper's 12 minutes run/walk test, push-ups, sit and reach test and skinfold caliper. Data were collected prior and immediately after experimental treatment. The collected data were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 levels for all cases.

Training Programme

The exercise intervention was structured and supervised by the study investigators and certified experienced fitness trainers at "7 Fitness" centre, Chennai. Each of these sessions commenced and concluded with an l0-min warm-up or cool down and stretching period. Multigym training was perform with sensible resistance exercise for (Upper body: biceps curl, bench press, one arm bent row, pull over, shoulder press, incline press; Lower body: squat, step-up, lunges) major body muscles were conducted. During the first week, the exercises were performed with 50% of one repetition maximum (1RM) in 3 sets with 12-15 repetitions and a recovery period of 1-2 min. The intensity of the workout increased to 75% of 1RM in 3 sets with 8-10 repetitions during the six week. A work load chart as shown was prepared for each subject to monitor the multigym training program for six weeks experimental period.

TABLE I
MULTIGYM TRAINING SCHEDULE

S. No	Multigym Training	Week	I to II	III to IV	V to VI
		Intensity	50%	65%	75%
1	Dumb bell Squats	Sets	3	3	3
		Rep	12-15	12-15	8-10
2	Dumbbell Bench press	Sets	2	2	3
		Rep	12-15	12-15	8-10
3	Dumbbell One arm row	Sets	2	2	3
		Rep	12-15	12-15	8-10
4	Dumbbell Step-up	Sets	2	2	3
		Rep	12-15	12-15	8-10
5	Dumbbell Incline press	Sets	2	2	3
		Rep	12-15	12-15	8-10
6	Dumbbell Pull over	Sets	2	2	3
		Rep	12-15	12-15	8-10
7	Dumbbell Lunges	Sets	2	2	3
		Rep	12-15	12-15	8-10
8	Dumbbell Shoulder press	Sets	2	2	3
		Rep	12-15	12-15	8-10
9	Dumbbell Biceps Curl	Sets	2	2	3
		Rep	12-15	12-15	8-10
10	Abdominal crunch	Sets	2	2	3
		Rep	12-15	12-15	8-10

Results and Discussion

The analysis of covariance on selected health related fitness variables such as cardiorespiratory endurance, muscular strength, flexibility and body composition of multigym training group and control group have been analyzed separately and presented in Table I.

Table II
Computation of Analysis of Covariance on Selected Health Related Fitness Components

Variable	Means	Exp. Gr	Con. Gr	SV	SS	df	MS	F
Cardio respiratory Endurance	Pre test	1800.33	1866.67	**B**	33000.83	1	33000.833	1.83
				W	503956.67	28	17998.45	
	Post test	2303.67	1885.00	**B**	1314613.33	1	1314613.33	**83.35***
				W	441623.33	28	15772.26	
	Adjusted	2310.97	1877.70	**B**	1321400.55	1	1321400.55	**85.52***
				W	417193.89	27	15451.63	
Muscular strength	Pre test	20.33	19.27	**B**	8.53	1	8.533	1.66
				W	144.27	28	5.15	
	Post test	24.13	18.93	**B**	202.80	1	202.80	**34.48***
				W	164.67	28	5.88	
	Adjusted	23.64	19.43	**B**	125.20	1	125.20	**86.49***
				W	39.09	27	1.45	
Flexibility	Pre test	23.80	22.87	**B**	6.53	1	6.533	1.13
				W	162.13	28	5.79	
	Post test	26.60	23.67	**B**	64.53	1	64.53	**8.99***
				W	200.93	28	7.18	
	Adjusted	26.23	24.04	**B**	34.76	1	34.76	**9.42***
				W	99.67	27	3.69	
Body Composition	Pre test	29.01	30.43	**B**	15.12	1	15.123	1.91
				W	221.85	28	7.92	
	Post test	25.09	31.01	**B**	262.85	1	262.85	**43.60***
				W	168.79	28	6.03	
	Adjusted	25.58	30.53	**B**	171.65	1	171.65	**72.35***
				W	64.06	27	2.37	

*Significant at 0.05 level of confidence for the degree of freedom 1 and 28 is 4.20 and df 1 and 27 is 4.21

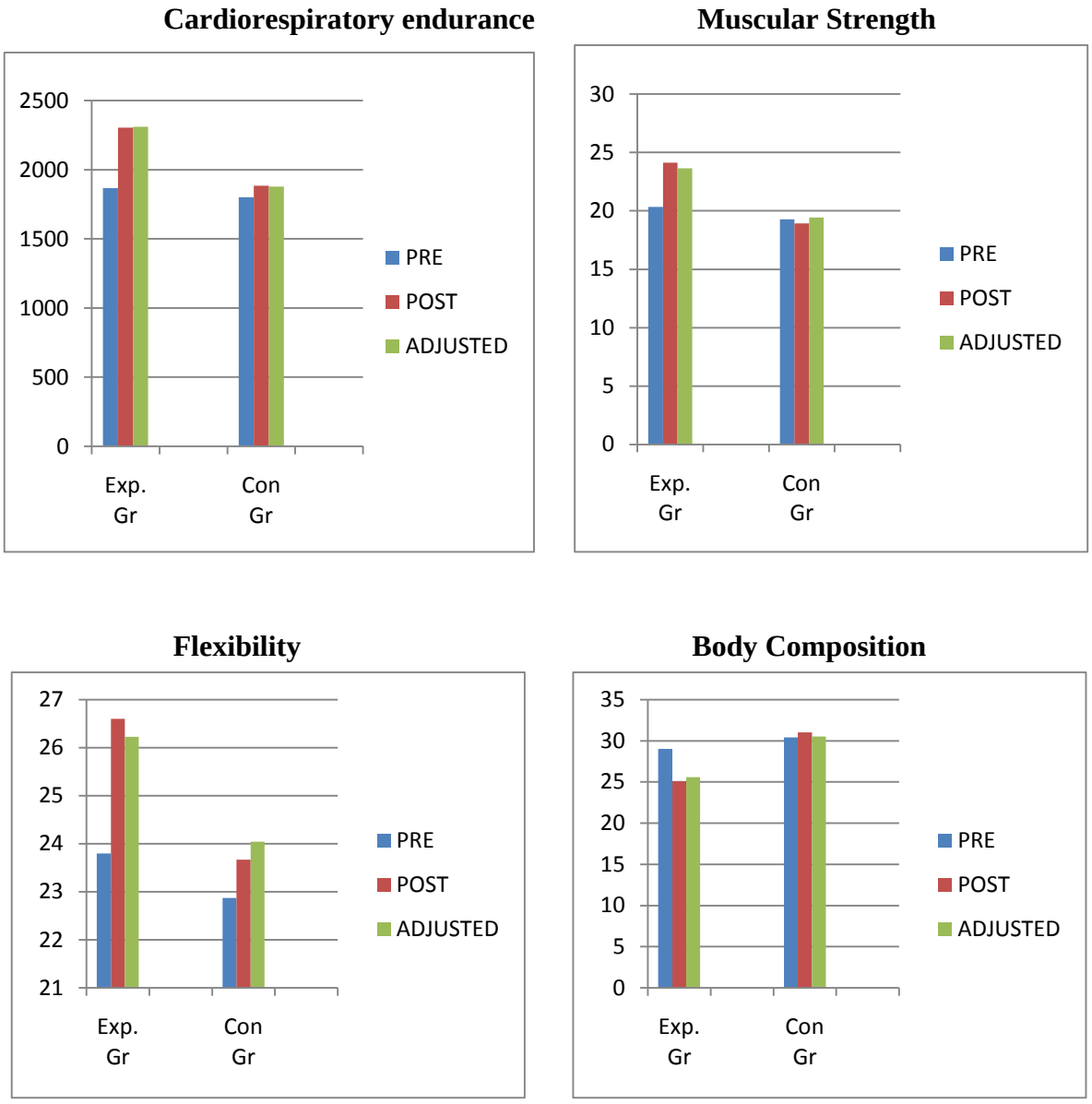
The results presented in above table II shows the obtained F values on the scores of pre test means of cardiorespiratory endurance, muscular strength, flexibility and body composition were 1.86, 1.66, 1.13 and 1.91 which were lesser than the required F value 4.20, which proved that the random assignment of the subjects in multigym training group

and control group were successful and before the training were equal.

The obtained F values on the post test means of cardiorespiratory endurance, muscular strength, flexibility and body composition 83.35, 34.48, 8.99, and 43.60 respectively were higher than the required F value 4.20, which revealed that there was a significant difference at 0.05 level.

The obtained F values on the adjusted post test means of cardiorespiratory endurance, muscular strength, flexibility and body composition of 85.52, 86.49, 9.42 and 72.35 respectively were higher than the required F value 4.21, which revealed that there was a significant difference among multigym training group and control group. It clearly indicated that there was a significant difference among the groups on cardiorespiratory endurance, muscular strength, flexibility and body composition.

Figure – 1
Bar Diagram on Pre Test, Post Test and Ordered Adjusted Means of Cardiorespiratory Endurance, Muscular Strength, Flexibility and Body Composition



Discussion on Findings

Resistance training as an exercise programme where free or stationary weights are used for the purpose of increasing muscular strength, muscular endurance and power and body composition through which skills can be improved **Moran and McGlynn (1990)**. In general, exercise is beneficial for health and physical fitness, while a sedentary lifestyle has a negative effect on a person's well-being. The present study was investigated the effect of multigym training on selected health related fitness among adult men. The result proved that multigym training significantly improved cardiorespiratory endurance, muscular strength, flexibility and significantly decreased body composition among adult men.

Conclusion

The result of the study was concluded that multi gym training could produce favourable changes in selected health related fitness such as cardiorespiratory endurance, muscular strength, flexibility and body composition in adult men.

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