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EFFECT OF RESISTANCE TRAINING AND GYM EXERCISES ON STRENGTH AMONG POWERTLIFTERS

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ABSTRACT

Aim of the study to find out the effect of resistance training and gym exercises on strength among powerlifters. The research design of the study was random group design. 60 inter collegiate level Power Lifters who represented their college were selected at random. The selected subjects were randomly divided into three groups and assigned into resistance training group (Group-I), gym exercises group (Group-II) and control group. Each group consisted of 20 subjects. The training period was 12 weeks and three sessions a week on alternative days. Prior to experimental treatments all the subjects were measured of strength for this study. After the completion of the experimental period, the all the subjects were again measured strength. The differences between the initial and final means on criterion variables were considered as the effect of respective treatment among the subjects. To test statistical significance of the difference, the obtained data were analyzed using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis.

Key Words: Resistance training, Gym exercises and Strength.

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INTRODUCTION

The physical education programme provides each student with an opportunity to assess his fitness and to develop skill and understanding that will enable him to enjoy a productive stay in school, college and a more meaningful existence after school and college.

Right from the origin of physical education the major objectives of physical education was physical fitness. The aim of physical education in the early years attained physical fitness, which was a main requisite of the then citizens. As days changed, the need, importance, scope and objectives have also changed because the demand of environment to preserve to withstand stress, to resist fatigue and to possess the energy for vigorous and well rounded life has increased.

METHODOLOGY

SELECTION OF SUBJECTS

To achieve the purpose of the study, 60 inter collegiate level Power Lifters who represented their college in Dr.B.R.Ambedkar, University, Andhra Pradesh, were randomly selected. The subjects were selected from various arts and science colleges in Andhra Pradesh, India. The age of the subjects ranged between 19 and

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25 years. The selected subjects were fit to undergo the experimental training and gave their written consent to participate in the study.

SELECTION OF VARIABLES

DEPENDENT VARIABLES

1. Strength (Muscular Strength)

Independent variables

1. 12 weeks structured resistance training
2. 12 weeks gym exercises

RESEARCH DESIGN

The research design of the study was random group design. 60 inter collegiate level Power Lifters who represented their college were selected at random. The selected subjects were randomly divided into three groups and assigned into resistance training group (Group-I), gym exercises group (Group-II) and control group. Each group consisted of 20 subjects. The training period was 12 weeks and three sessions a week on alternative days. Prior to experimental treatments all the subjects were measured of strength for this study. After the completion of the experimental period, the all the subjects were again measured strength. The differences between the initial and final means on criterion

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variables were considered as the effect of respective treatment among the subjects. To test statistical significance of the difference, the obtained data were analysed using ANCOVA. In all cases 0.05 level was fixed to test the hyhpothesis.

COMPUTATION OF ANALYSIS OF VARIANCE AND POST HOC TEST

RESULTS ON MUSCULAR STRENGTH

The statistical analysis comparing the initial and final means of Muscular Strength due to resistance training and gym exercises among Power Lifters is presented in Table I

Table I

ANCOVA RESULTS ON EFFECT OF STRUCTURED RESISTANCE TRAINING AND GYM EXERCISES COMPARED WITH CONTROLS ON MUSCULAR STRENGTH

	RESISTANCE TRAINING	GYM EXERCISES	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED F
Pre Test Mean	25.40	24.00	24.00	Between	26.13	2	13.07	0.55
				Within	1348.80	57	23.66	
Post Test Mean	32.60	29.60	24.15	Between	734.03	2	367.02	13.57*
				Within	1542.15	57	27.06	

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Adjusted Post Test Mean	31.68	30.06	24.61	Between	543.29	2	271.65	69.02*
				Within	220.41	56	3.94	
Mean Diff	7.20	5.60	0.15					

Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.16, 2 and 56 (df) =3.16.

*Significant

As shown in Table I, the obtained pre test means on Muscular Strength on resistance training group was 25.40, gym exercises group was 24.00 was and control group was 24.00. The obtained pre test F value was 0.55 and the required table F value was 3.16, which proved that there was no significant difference among initial scores of the subjects.

The obtained post test means on Muscular Strength on resistance training group was 32.60, gym exercises group was 29.60 was and control group was 24.15. The obtained post test F value was 13.57 and the required table F value was 3.16, which proved that there was significant difference among post test scores of the subjects.

Taking into consideration of the pre test means and post test means adjusted post test means were determined and analysis of covariance was done and the obtained F value 69.02 was greater than the required value of 3.16 and

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Research paper UGC CARE Listed (Group -I) Journal Volume 10,S Iss 2, 2021

hence it was accepted that there was significant differences among the treated groups.

Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II

Table II

Multiple Comparisons of Paired Adjusted Means and Scheffe's Confidence Interval Test Results on Muscular Strength

MEANS				Required . C I
resistance training Group	gym exercises Group	Control Group	Mean Difference	
31.68	30.06		1.61*	1.58
31.68		24.61	7.06*	1.58
	30.06	24.61	5.45*	1.58

***** Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between resistance training group and

ISSN PRINT 2319 1775 Online 2320 7876

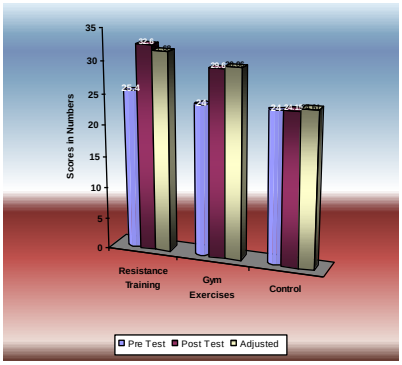
Research paper UGC CARE Listed (Group -I) Journal Volume 10,S Iss 2, 2021

control group (MD: 7.06). There was significant difference between gym exercises group and control group (MD: 5.45). There was significant difference between treatment groups, namely, resistance training group and gym exercises group. (MD: 1.61).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure I

BAR DIAGRAM SHOWING PRE TEST, POST TEST AND ORDERED ADJUSTED MEANS ON MUSCULAR STRENGTH



ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 10,S Iss 2, 2021

DISCUSSIONS ON FINDINGS ON MUSCULAR STRENGTH

In order to find out the effect of resistance training and gym exercises on Muscular Strength the obtained pre and post test means were subjected to ANCOVA and post hoc analysis through Scheffe's confidence interval test.

The effect of resistance training and gym exercises on Muscular Strength is presented in Table I. The analysis of covariance proved that there was significant difference between the experimental group and control group as the obtained F value 69.02 was greater than the required table F value to be significant at 0.05 level.

Since significant F value was obtained, the results were further subjected to post hoc analysis and the results presented in Table II proved that there was significant difference between resistance training group and control group (MD: 7.06) and gym exercises group and control group (MD: 5.45). Comparing between the treatment groups, it was found that there was significant difference between resistance training and gym exercises group among Power Lifters.

Thus, it was found that structured resistance training was significant better than gym exercises and control group in improving Muscular Strength of the Power Lifters.

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CONCLUSION

1. It was concluded that compared to control group, experimental groups resistance training and gym exercises significantly improved muscular strength of Power Lifters. Comparing between the treatment groups, it was found that resistance training was significantly better than gym exercises in improving muscular strength of Power Lifters.

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